

Service Manual

 **PIONEER**
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ORDER NO.
ARP1850

VIDEO DISC AUTO CHANGER

LC-V300

- This manual is applicable to the KU/CA type.
- The LDP unit is on the VH base, and it moves up and down together with the base.
- The LC-V300 uses a common spindle motor and independent pickup assemblies for playback of A and B sides.
- In the LC-V300, the disc is loaded onto the tray and moved in the VH base direction together with the tray.
- Up to 72 30cm discs can be loaded. 20cm discs can also be played.
- Automatic play is possible with the integrated CO-V300 commander.
- Use the wired remote control jig for operating the unit during adjustment.

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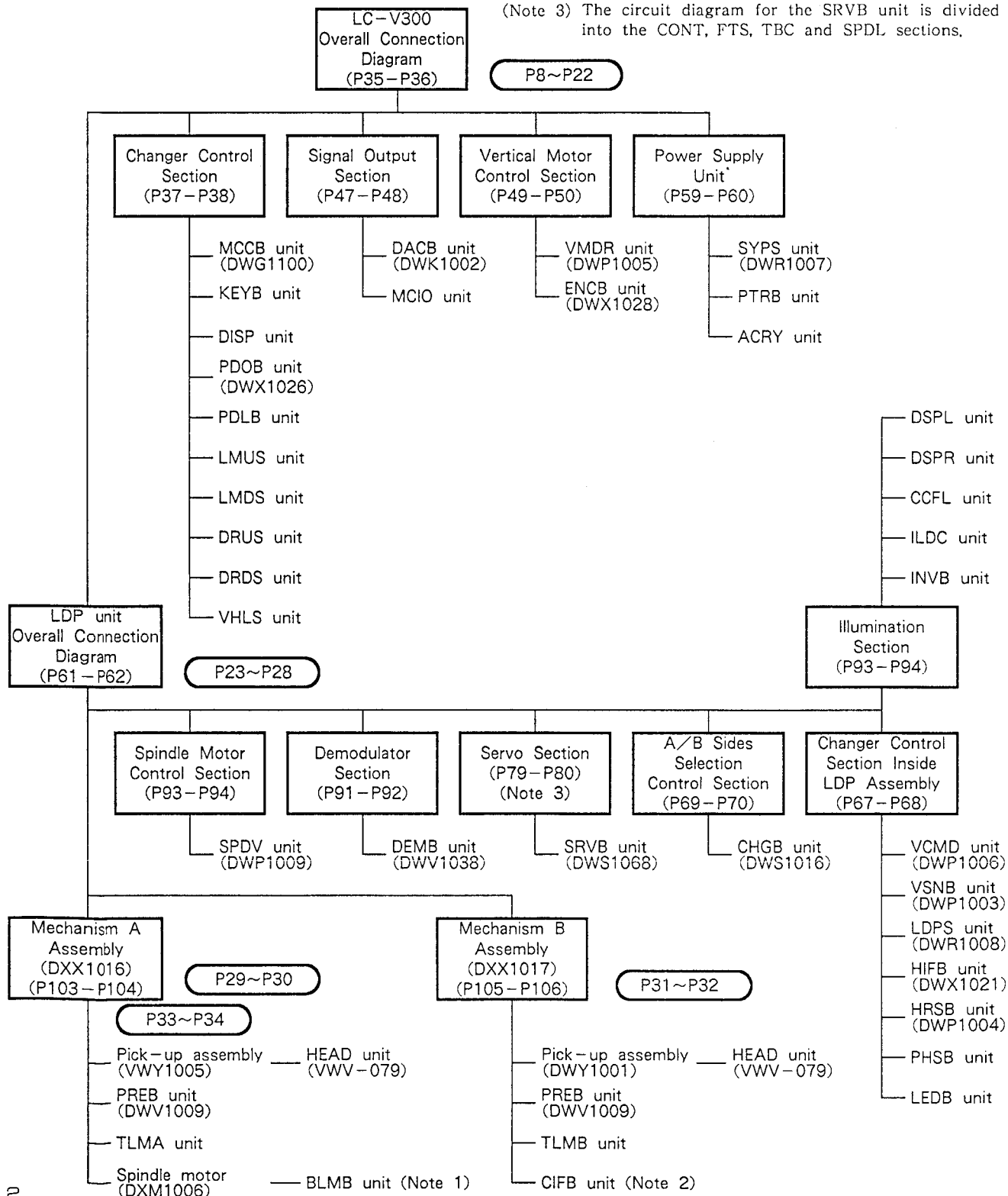
1. CONSTRUCTION RELATIONSHIP DIAGRAM OF LC-V300 ASSEMBLIES AND UNITS

 indicates the circuit diagram name and page.
 indicates the page where the exterior is shown.

(Note 1) The circuit diagram for the BLMB unit is shown on the same page as the circuit diagram for the SPDV unit.

(Note 2) The circuit diagram for the CIFB unit is shown on the same page as the circuit diagram for the CHGB unit.

(Note 3) The circuit diagram for the SRVB unit is divided into the CONT, FTS, TBC and SPDL sections.



2. BOARDS LOCATION

2.1. NAMES OF BOARDS

Board Name	Name	Parts No.	Board Name	Name	Parts No.
ACRY unit	A.C. & Relay Board	DWS1016	MCCB unit	Micro-Computer Controller Board	DWG1100
BLMB unit	Brushless Motor Board		MCIO unit	Micro-Computer I/O Board	
CCFL unit	Cold Cathode Fluorescent Lamps Board		PDLB unit	Protrusion Detect LED Board	
CHGB unit	Changing Board		PDOB unit	Protrusion Detect Optical Sensor Board	DWX1026
CIFB unit	Change Interface Board	DWK1002	PHSB unit	Photo Transistor Sensor Board	
DACB unit	D/A Converter Board		PREB unit	Pre-processing Board	DWV1009
DEMB unit	Demodulator Board	DWV1038	PTRB unit	Power Transistor Board	
			SPDV unit	Spindle Motor Driver Board	DWP1009
DISP unit	Display Board		SRVB unit	Servo Board	DWS1068
DRDS unit	Door Down Switch Board				
DRUS unit	Door Up Switch Board		SYPS unit	System Power Supply Board	DWR1007
DSPL unit	Display Left Board		TLMA unit	Tilt Motor A Board	
DSPR unit	Display Right Board		TLMB unit	Tilt Motor B Board	
ENCB unit	Encoder Board	DWX1028	VCMD unit	Vertical Controller & Motor Driver Board	DWP1006
HEAD unit	Head Board	VWV-079	VHLS unit	VH Base Lock Switch Board	
HIFB unit	Horizontal Interface Board	DWX1021	VMDR unit	Vertical Motor Driver Board	DWP1005
HRSB unit	Horizontal Rotary Sensor Board	DWP1004	VSNB unit	Vertical Sensor Board	DWP1003
ILDC unit	Illumination DC Power Board				
INVB unit	Inverter Right Board				
KEYB unit	Manual Key Board				
LDPS unit	LDD Power Supply Board	DWR1008			
LEDB unit	LED Board for Disc Sensor				
LMDS unit	Limit Down switch Board				
LMUS unit	Limit Up Switch Board				

Service according to the information obtained from the service mode described in 9. and the table shown below.

○ ... highly related

△ ... related

Unit Assembly	Function	Related Operations				
		Vertical	Horizontal	Clamp	Changing	LDP playback
MCCB unit	Control of changer (Note 1)	○	○	○	○	○
DACB unit	Demodulation of LDD disk digital sounds.					(Note 2)
VMDR unit	Control of vertical motor	○				
VCMD unit	Relay of signals between main unit and LDP unit section. Driving of horizontal motor and clamp motor.	△	○	○	△	△
CHGB unit	Selection of side A and side B, driving of focus coil, tracking coil, and spindle motor				○	○
SPDV unit	Control of spindle motor					○
DEMB unit	LDP playback, mainly demodulation					○
SRVB unit	LDP playback, mainly servo					○
Mechanism A assembly	Pick-up system for side A playback and spindle motor					○
Mechanism B assembly	Pick-up system for side B playback and changing motor				○	○ (Side B)

(Note 1) Exchange of command signals with external equipment is through MCCB unit.

(Note 2) Replace the DACB unit in case LDD sound is interrupted or if the LDD indicator does not light during LDD playback. Also, replace the sound muting circuit if there is video output but no sound during LDP playback, and this cannot be solved by replacing any other unit.

2.2. LDP UNIT SECTION

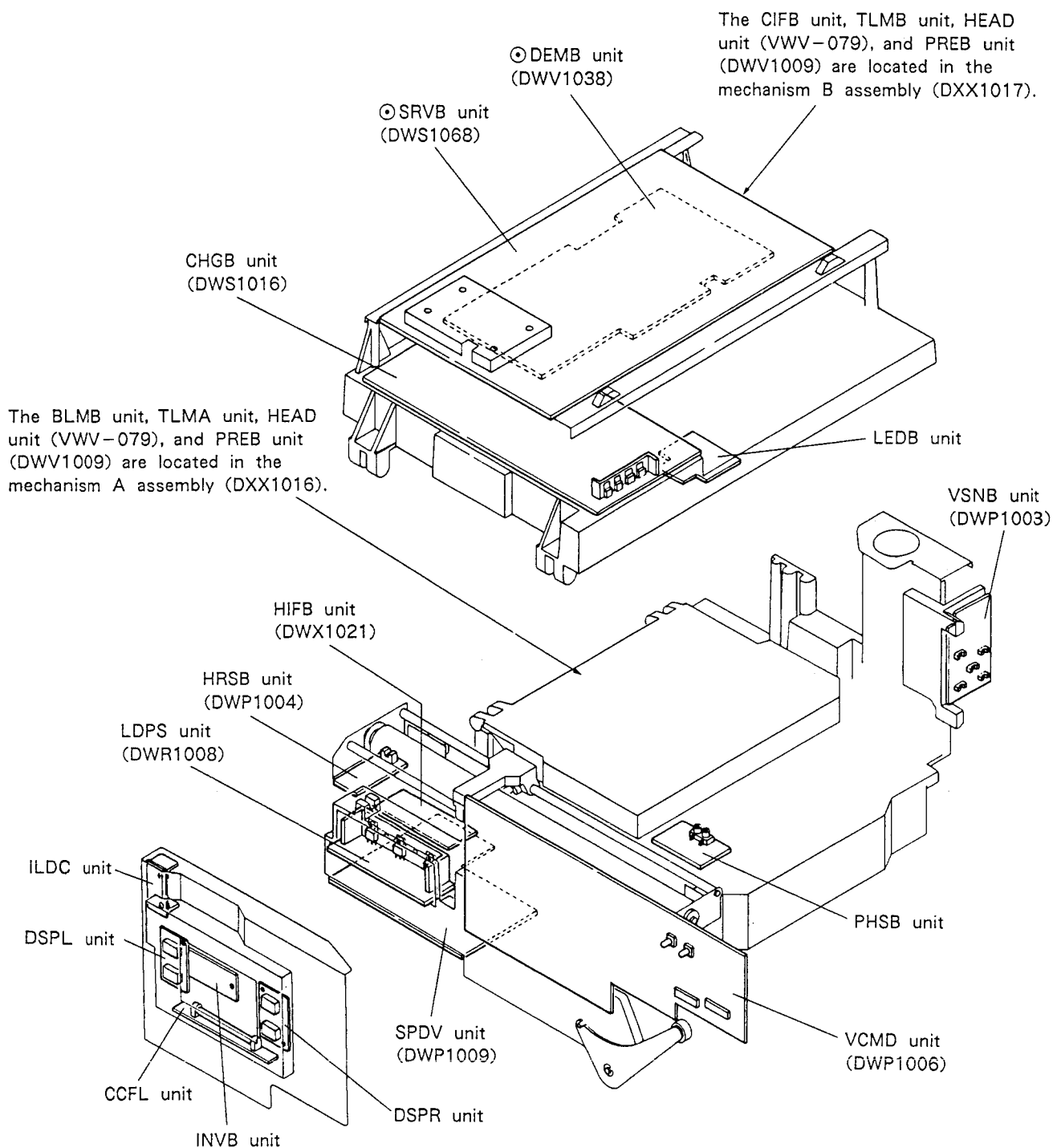


Fig. 2-1. LDP Unit Boards Location

2.3. MAIN BODY SECTION

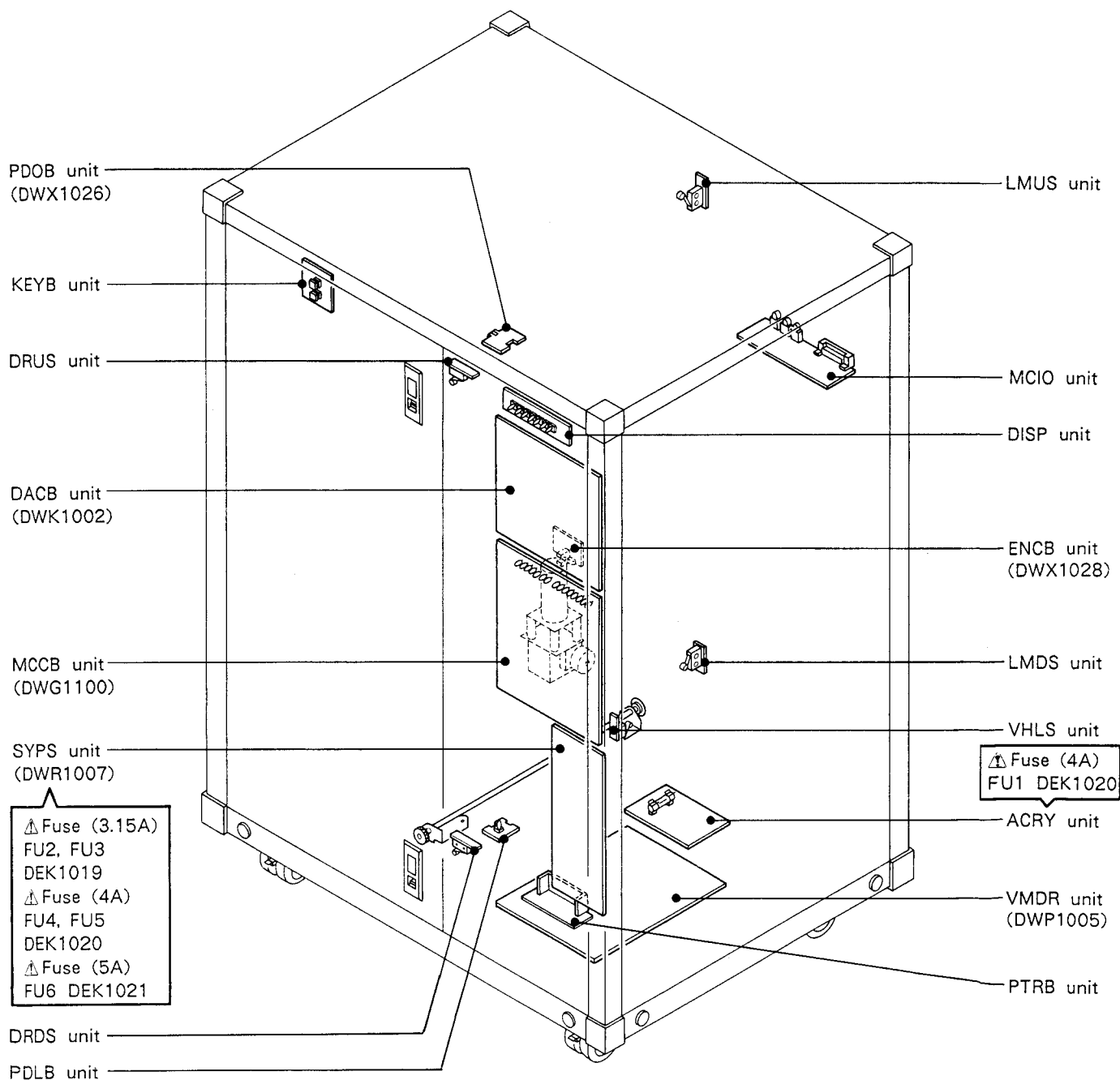
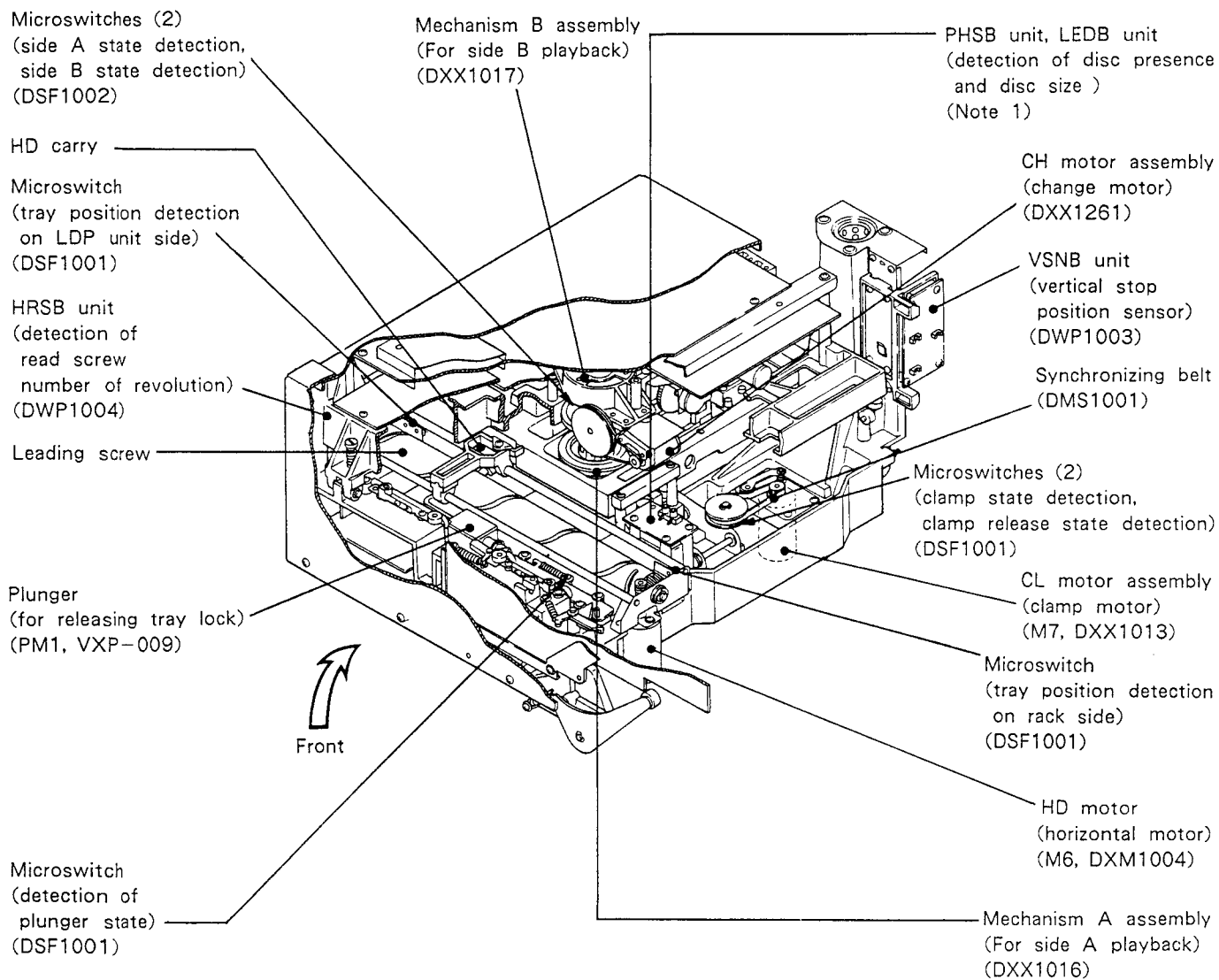


Fig. 2-2. Boards Location of Main Body

3. PARTS LOCATION

3.1. LDP UNIT SECTION



(Note 1) The LEDB unit is not shown
in the figure. It is the upper
section on the PHSB unit.

Fig. 3-1. LDP Unit Parts Layout Diagram

3.2. MAIN BODY SECTION

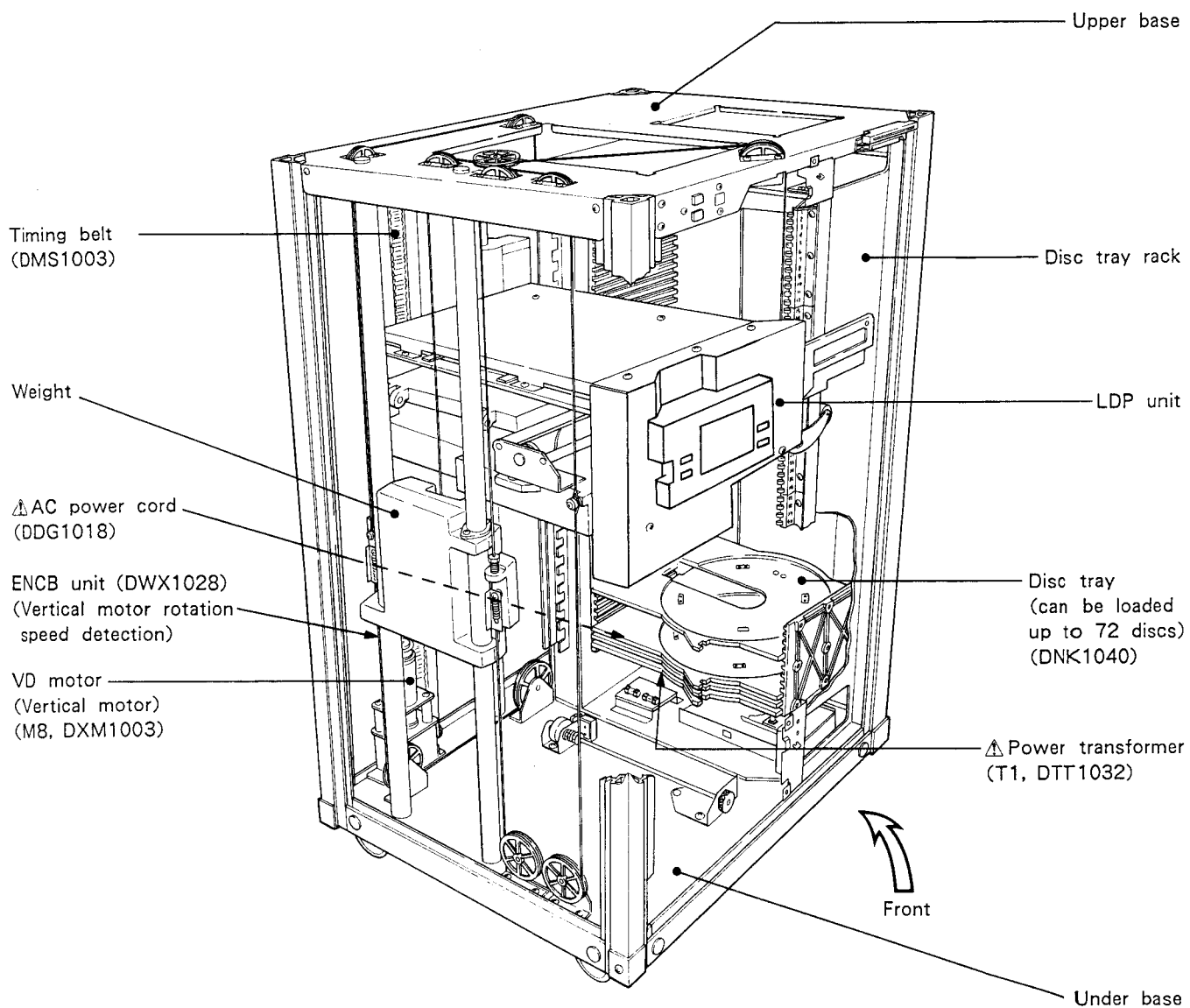


Fig. 3-2. Main Body Section Parts Location

4. EXPLODED VIEWS AND PARTS LIST

NOTES :

- Parts without part number cannot be supplied.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.

4.1 MAIN BODY

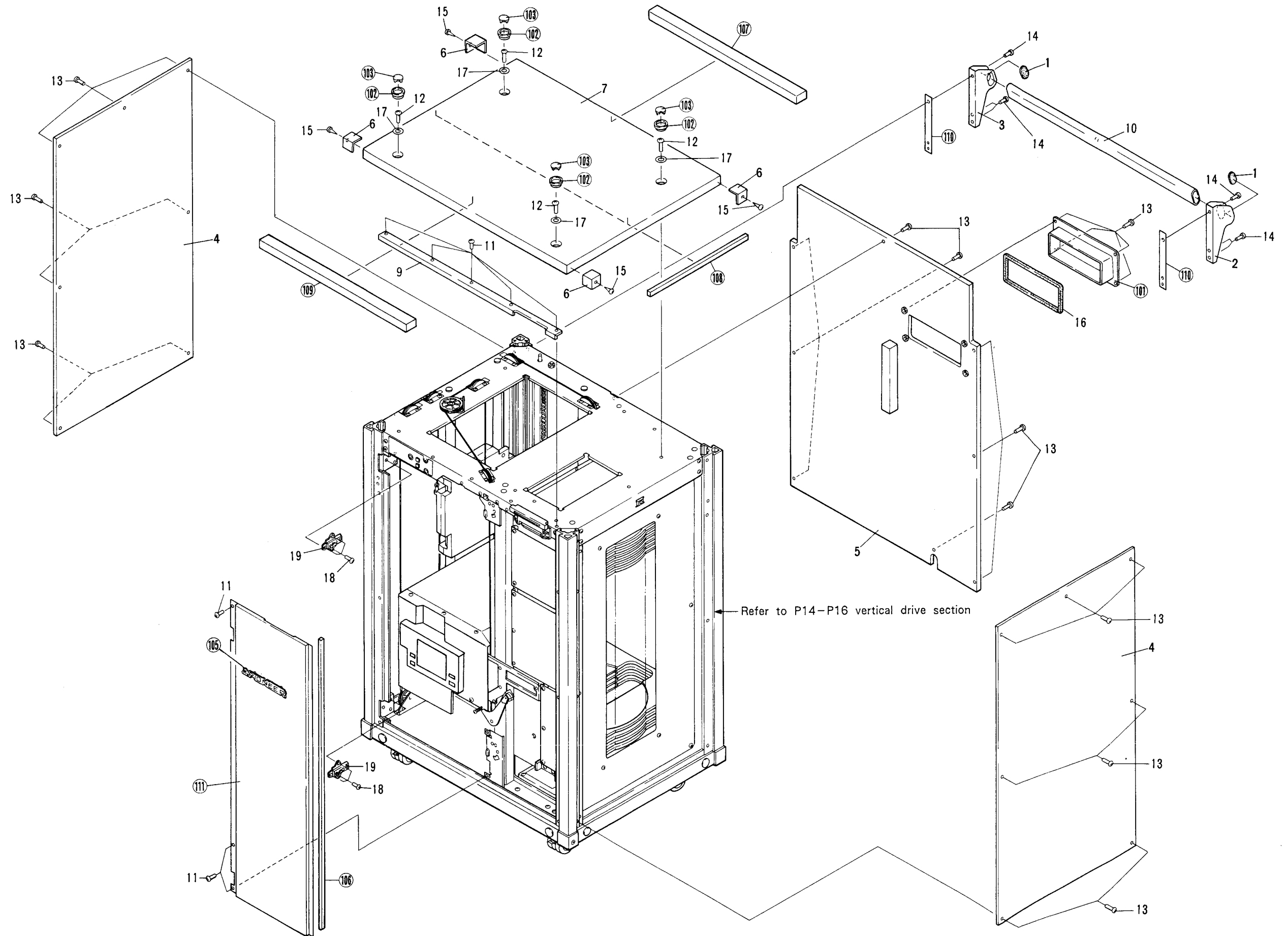
4.1.1 Exterior

Mark	No.	Part No.	Description
	1	DEB1016	Cushion
	2	DNF1022	Grip holder (L)
	3	DNF1023	Grip holder (R)
	4	DMK1045	Side plate
	5	DMK1002	Rear plate
	6	DNK1035	Corner protector
	7	DMK1003	Upper plate
	8		.....
	9	DMK1004	Decoration plate
	10	DLA1053	Grip pipe
	11	BBZ40P080FMC	Screw
	12	BMZ60P350FMC	Screw
	13	PMF40P200FZK	Screw
	14	AMZ60P100FZK	Screw
	15	DBA-105	Screw
	16	DEB1083	Seal packing
	17	DNH-104	Washer
	18	PMA40P100FMC	Screw
	19	DXB1017	Mounting plate
	101		Escutcheon
	102		Screw cover (A)
	103		Screw cover (B)
	104		.....
	105		Badge
	106		Cushion
	107		Seal packing
	108		Seal packing
	109		Seal packing
	110		Holder sheet
	111		Front plate

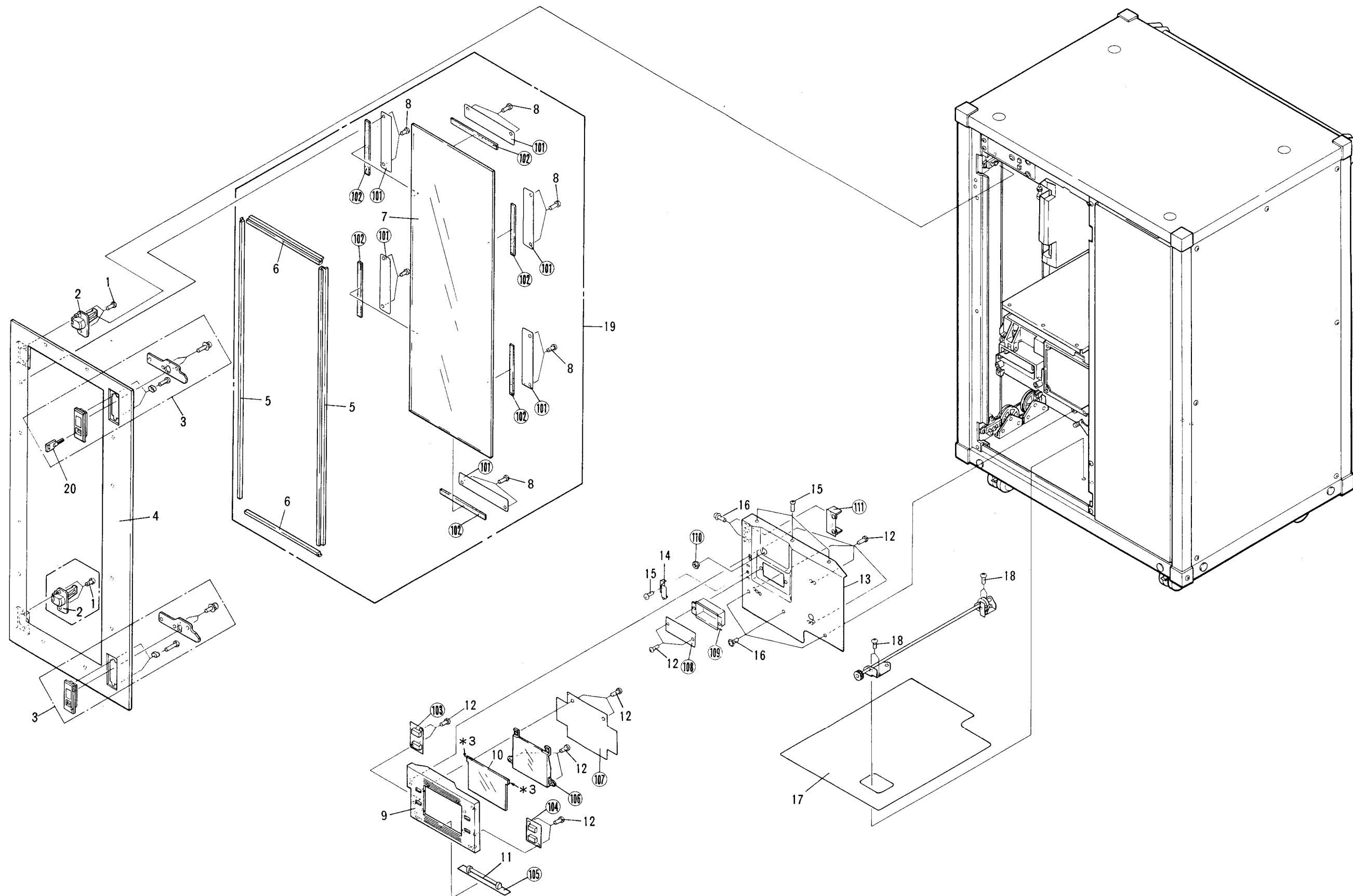
4.1. MAIN BODY

4.1.1. Exterior

LC-V300



4.1.2. Exterior (Illumination Section,Door Glass Assembly Section)



A

B

C

D

Parts List of Exterior (Illumination Section, Door Glass Assembly Section)

Mark	No.	Part No.	Description
	1	CMZ40P080FMC	Screw
	2	DXB1016	Slide hinge
	3	DXB1018	Door lock handle
	4	DXX1273	Door assembly (Door with seal packing)
	5	DAP1006	DG frame (A)
	6	DAP1007	DG frame (B)
	7	DAN1001	Door glass
	8	BBZ40P060FZK	Screw
	9	DNK1483	Display cover
	10	DAH1326	Display sheet
	11	DEL1002	Fluorescent indicator
	12	BBZ30P080FMC	Screw
	13	DNH1088	VH cover F
	14	DEC1088	TF guard
	15	BBZ30P080FZK	Screw
	16	AMZ30P060FZK	Screw
	17	DEC1087	Black sheet
	18	BBZ40P080FMC	Screw
	19	DXX1272	Flont plate assembly
	20	DEF1001	Key
	101		DG plate
	102		Glass packing
	103		DSPL unit
	104		DSPR unit
	105		CCFL unit
	106		LA lens
	107		Reflection lens
	108		INVB unit
	109		Shield cover
	110		Edge guard
	111		ILDC unit

*3 : Fix areas indicated by “*3” in place with adhesive.

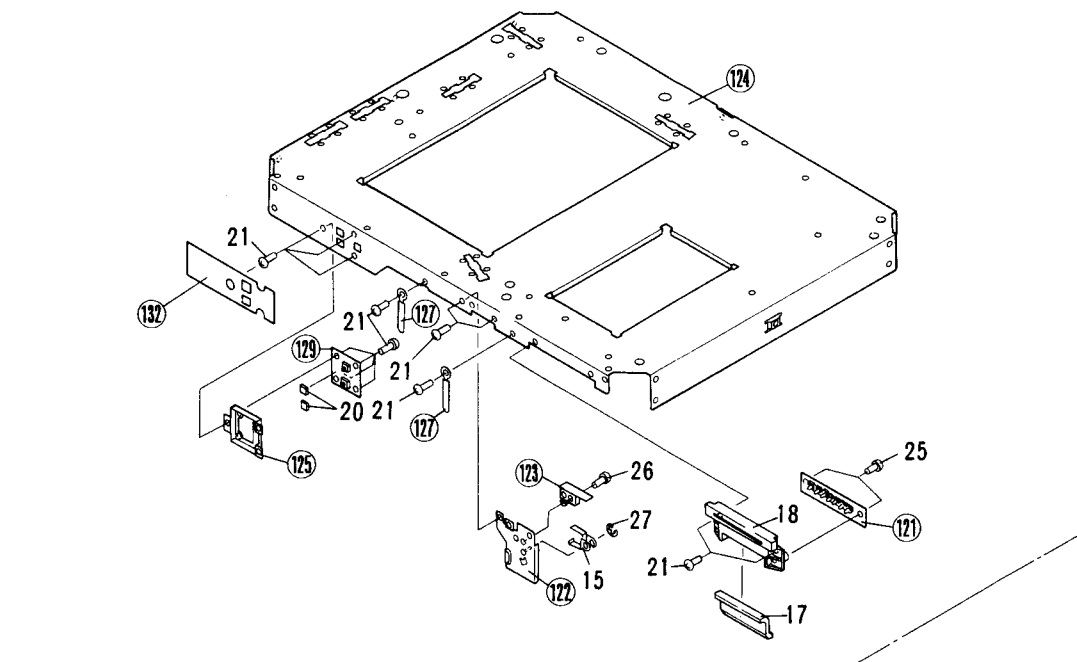
Parts List of Vertical Drive Section

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	DNH1031	Frame (A)		106		Linear shaft
	2	DNH1032	Frame (B)		107		.....
	3	DNK1035	Corner protector		108		.....
	4	DNK1050	Hole cap		109		.....
	5	DMS1003	Timing belt		110		VD belt stopper
	6	DNK1044	VD pulley		111		VH cover
	7	DLA1065	Worm wheel assembly		112		VH cover F
	8	DLA1064	Worm gear assembly		113		.....
	9	DXX1234	VD gear box assembly		114		VI flange
	10	DNK1043	Coupling		115		Weight
	11	DXM1003	VD motor		116		Hinge plate
	12	DWX1028	ENCB unit		117		Pulley holder
	13	DXB1021	Disc slit		118		WP holder (A)
	14		.....		119		PCB plate F
	15	DEB1081	Flange cushion		120		Cord clasper
	16	DNK1045	Weight pulley		121		Motor cover
	17	DNK1048	W holder		122		Pulley shaft (B)
	18	DBH1019	Weight spring		123		Back plate
	19	DDD1002	Flexible cord				
	20	DMA-112	Pulley D				
	21	DXB-109	Bearing				
	22	DEB1003	PL ring				
	23	DLA1067	WP shaft (A)				
	24	YE30FUC	Washer				
	25	YE40FUC	Washer				
	26	AMZ30P060FMC	Screw				
	27	AMZ20P060FMC	Screw				
	28	ZMD26D030FBT	Screw				
	29	AMZ40P080FMC	Screw				
	30	AMZ30P160FMC	Screw				
	31	PMZ26P120FMC	Screw				
	32	NB26FMC	Nut				
	33	BBZ40P080FMC	Screw				
	34	AMZ40P060FMC	Screw				
	35	ZMD30H080FBT	Screw				
	36	AMZ26P100FZK	Screw				
	37	BMZ60P080FMC	Screw				
	38	WW16S	Wave washer				
	39	WB40FMC	Washer				
	40	NN30FUC	Nut				
	41	DBA1002	Screw				
	42	DBA-105	Screw				
	43	NB60FMC	Nut				
	44	BBZ30P060FMC	Screw				
	45	WB40FMC	Washer				
	46		.....			
	47	VEC-067	Binder				
	48	DXB1031	WP holder (B) assembly				
	49	DXB1039	CW wire assembly (A)				
	50	DXB1029	CW wire assembly (B)				
	51	DXB1030	CW wire assembly (C)				
	101		GB holder				
	102		GB plate				
	103		VM boss				
	104		VM plate				
	105		VME plate				

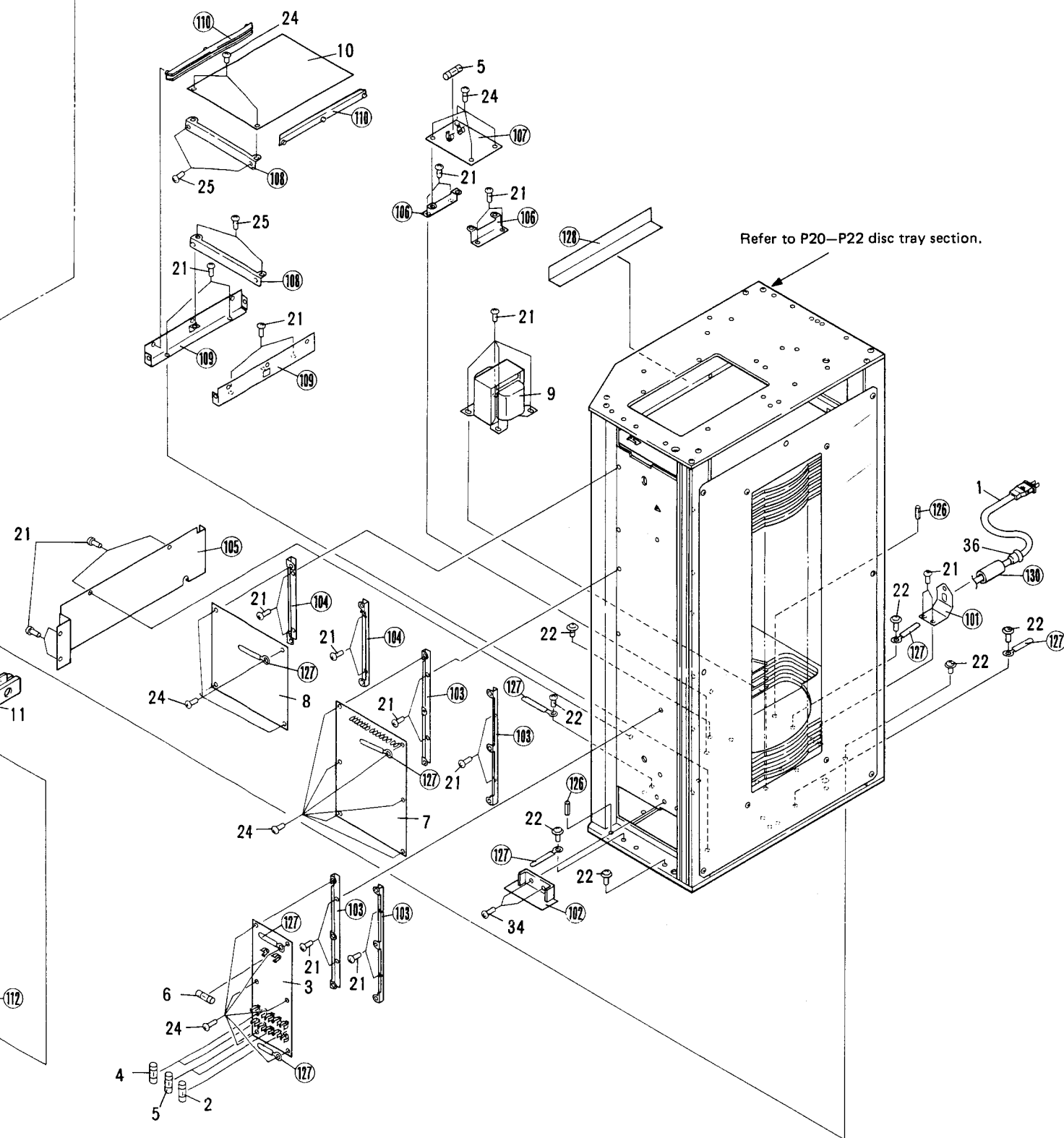
*1 : Apply grease (GYA-008) to areas indicated by "*1".
 *3 : Fix areas indicated by "*3" in place with adhesive.
 *4 : Grease the lubricating oil (super highland oil) to the section marked with *4.

- Replacement of worm gear assembly (DLA1064) (8) and worm wheel assembly (DLA1065) (7)
 The VD gear box assembly (DXX1012) (9) contains oil 46 (Z51-045). Use care to prevent an oil leak during disassembly.
- ① Hold the unit with the worm wheel assembly (DLA1065) (7) up.
- ② The worm gear assembly (DLA1064) (8) replacement is performed while the worm wheel assembly (DLA1065) (7) is removed.

4.1.4. Chassis Section (Upper Base Section)



(Under Base Section)



Refer to P20—P22 disc tray section.

Parts List of Chassis Sections

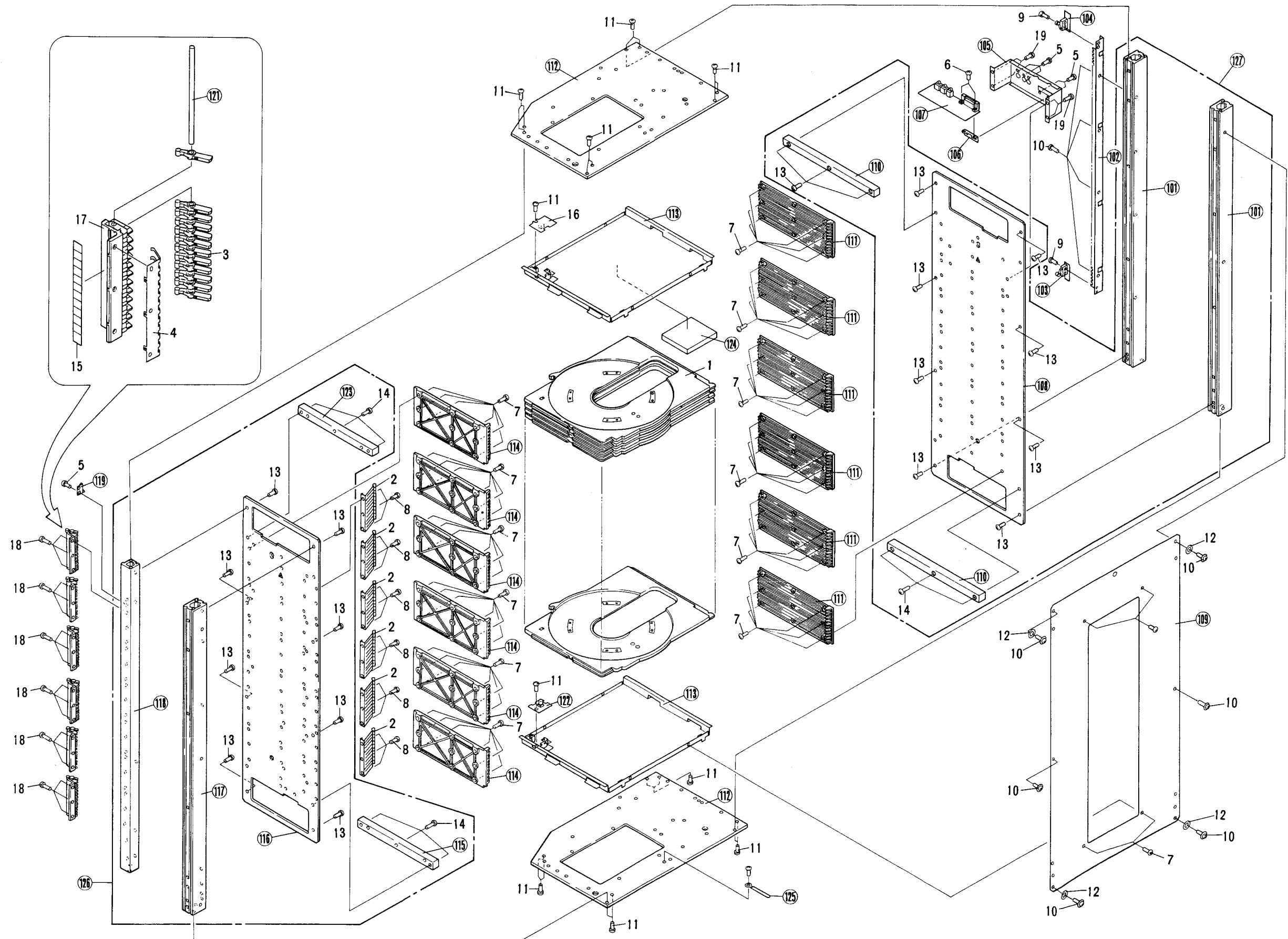
Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
△	1	DDG1018	AC power cord		121		DISP unit
△	2	DEK1021	Fuse (5A, FU6)		122		Door lock plate (A) assembly
	3	DWR1007	SYPS unit		123		DRUS unit
△	4	DEK1019	Fuse (3.15A, FU2, FU3)		124		Upper base
△	5	DEK1020	Fuse (4A, FU1, FU4, FU5)		125		MS mount plate
	6	VCX-006	Hours meter		126		Spring pin
	7	DWG1100	MCCB unit		127		Cord holder
	8	DWK1002	DACB unit		128		Tape
△	9	DTT1032	T1 Power transformer		129		KEYB unit
	10	DWP1005	VMDR unit		130		UL tube
	11	DNH1028	Under frame (B)		131		Seal (For insect)
	12	DNH1096	Under frame (C)		132		Switch label
	13	DXB1022	Caster (A)				
	14	DXB1023	Caster (B)				
	15	DBK1002	LP spring				
	16	DBH1018	VH lock spring				
	17	DNK1036	PI lens				
	18	DNK1037	Lens holder				
	19		.....			
	20	DAC-116	Push button				
	21	BBZ40P080FMC	Screw				
	22	AMZ40P120FMC	Screw				
	23	AMZ30P060FMC	Screw				
	24	BBZ30P060FMC	Screw				
	25	BBZ30P080FMC	Screw				
	26	PMH20P100FMC	Screw				
	27	YE15FUC	Washer				
	28	YE40FUC	Washer				
	29	WB60FMC	Washer				
	30	YE50FUC	Washer				
	31	AMZ40P080FMC	Screw				
	32	AMZ60P080FMC	Screw				
	33	BBZ40P080FZK	Screw				
	34	PMZ30P60FMC	Screw				
	35	VEC-067	Binder				
	36	DEC1170	Cord stopper				
	101		AC cord bracket				
	102		PTRB unit				
	103		SYPS stay				
	104		PCB holder				
	105		VMDR cover				
	106		FUSB stay				
	107		ACRY unit				
	108		VMDR stay				
	109		VMDR angle				
	110		PCB guide				
	111		Reinforced angle				
	112		Caster mount plate				
	113		Door lock plate (B) assembly				
	114		DRDS unit				
	115		Under base				
	116		Lock shaft				
	117		Lock plate (A)				
	118		Lock plate (B)				
	119		SW plate				
	120		VHLS unit				

Parts List of Disc Tray Rack Section

Mark	No.	Part No.	Description
	1	DNK1040	Disc tray
	2	DBK1012	Tray end spring
	3	DNK1041	Tray stopper
	4	DBK1004	TS plate spring
	5	BBZ30P080FZK	Screw
	6	PMA30P100FMC	Screw
	7	BBZ40P080FMC	Screw
	8	AMZ30P080FMC	Screw
	9	PMH20P100FMC	Screw
	10	AMZ40P080FMC	Screw
	11	BBZ30P060FMC	Screw
	12	WB40FMC	Washer
	13	AMZ40P100FZK	Screw
	14	AMZ40P200FZK	Screw
	15	DEC1004	Disc No. label
	16	DWX1026	PDOB unit
	17	DNK1042	TS holder
	18	DBA1006	TS screw
	19	BBZ40P060FZK	Screw
	101		Rack frame B
	102		Encoder plate
	103		LMDS unit
	104		LMUS unit
	105		Rear panel
	106		Terminal holder
	107		MCIO unit
	108		Rack plate (R)
	109		Back plate
	110		Reinforced block (R)
	111		Disc rack (R)
	112		Rack base
	113		Disc cover
	114		Disc rack (F)
	115		Reinforced block (F)
	116		Rack plate (F)
	117		Rack frame (B)
	118		Rack frame (A)
	119		TS stopper
	120		.....
	121		TS shaft
	122		PDLB unit
	123		Reinforced block FU
	124		Disc cushion
	125		Cord holder
	126		Rack frame assembly (F)
	127		Rack frame assembly (R)

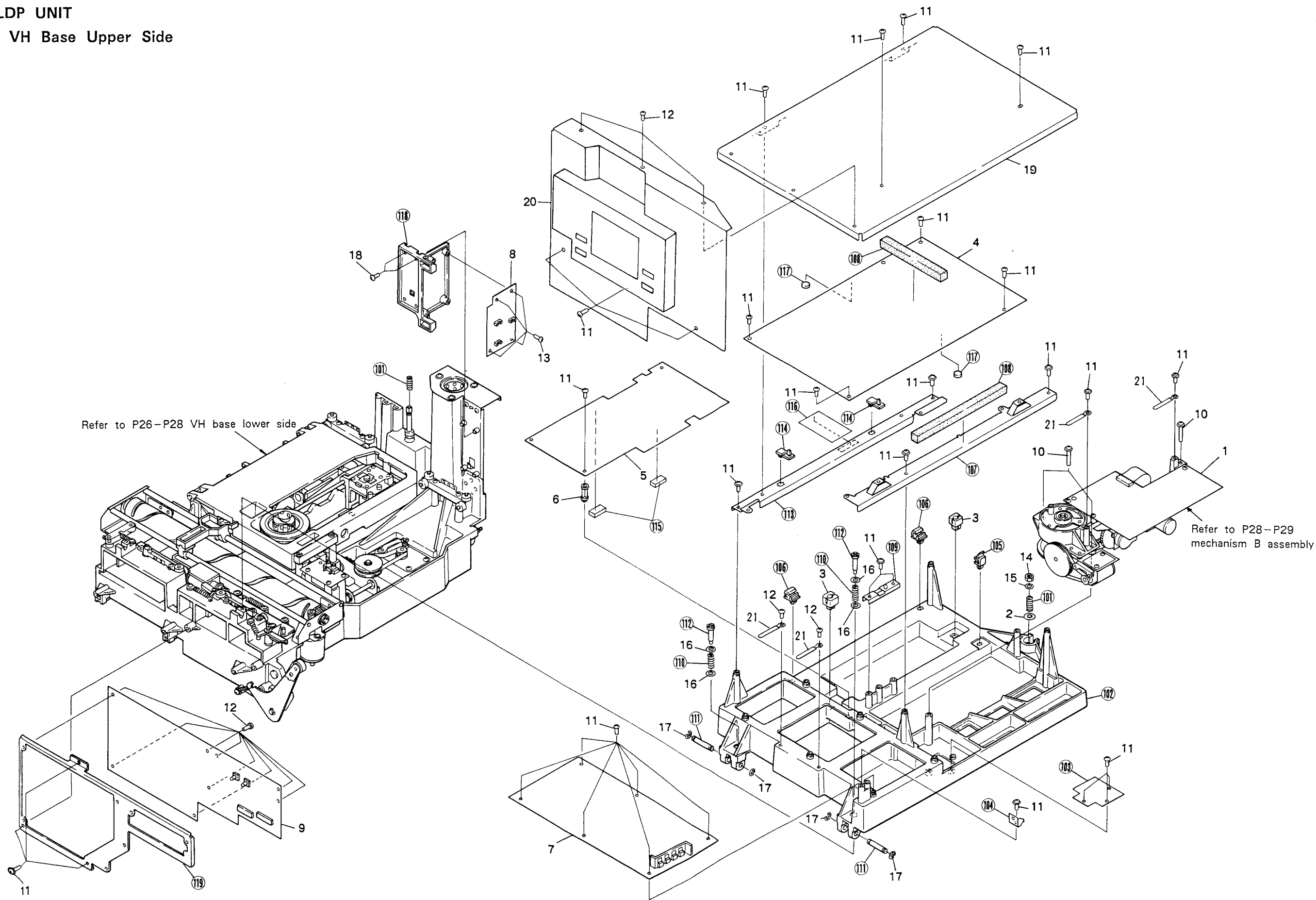
4.1.5. Disc Tray Rack Section

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4.2. LDP UNIT

4.2.1. VH Base Upper Side



Parts List of VH Base Upper Side Section

Mark	No.	Part No.	Description
	1	DXX1017	Mechanism B assembly
	2	DNH-104	Washer
	3	DEC1014	Screw grommet
⊙	4	DWS1068	SRVB unit
⊙	5	DWV1038	DEMB unit
	6	DEC1013	Screw gromet
	7	DWV1016	CHGB unit
	8	DWP1003	VSNB unit
	9	DWP1006	VCMD unit
	10	PMB30P100FGN	Screw
	11	AMZ30P060FMC	Screw
	12	BBZ30P060FMC	Screw
	13	BBZ30P080FMC	Screw
	14	NB80FMC	Nut
	15	WB80FMC	Washer
	16	WB70FMC	Washer
	17	YE40FUC	Washer
	18	ANZ30P060FMC	Screw
	19	DNH1087	VH cover
	20	DNH1088	VH cover F
	21	RNH-184	Cord holder
	101		PUB spring A
	102		PU base B
	103		LEDB unit
	104		PF holder
	105		PC support
	106		PCB holder
	107		PCB plate A
	108		Insulator packing
	109		PUB plate assembly
	110		PUB spring B
	111		PUB shaft C
	112		PU screw
	113		PCB plate B
	114		PCB hinge
	115		Cushion
	116		Shield sheet
	117		.....
	118		VD sensor holder
	119		PCB plate F

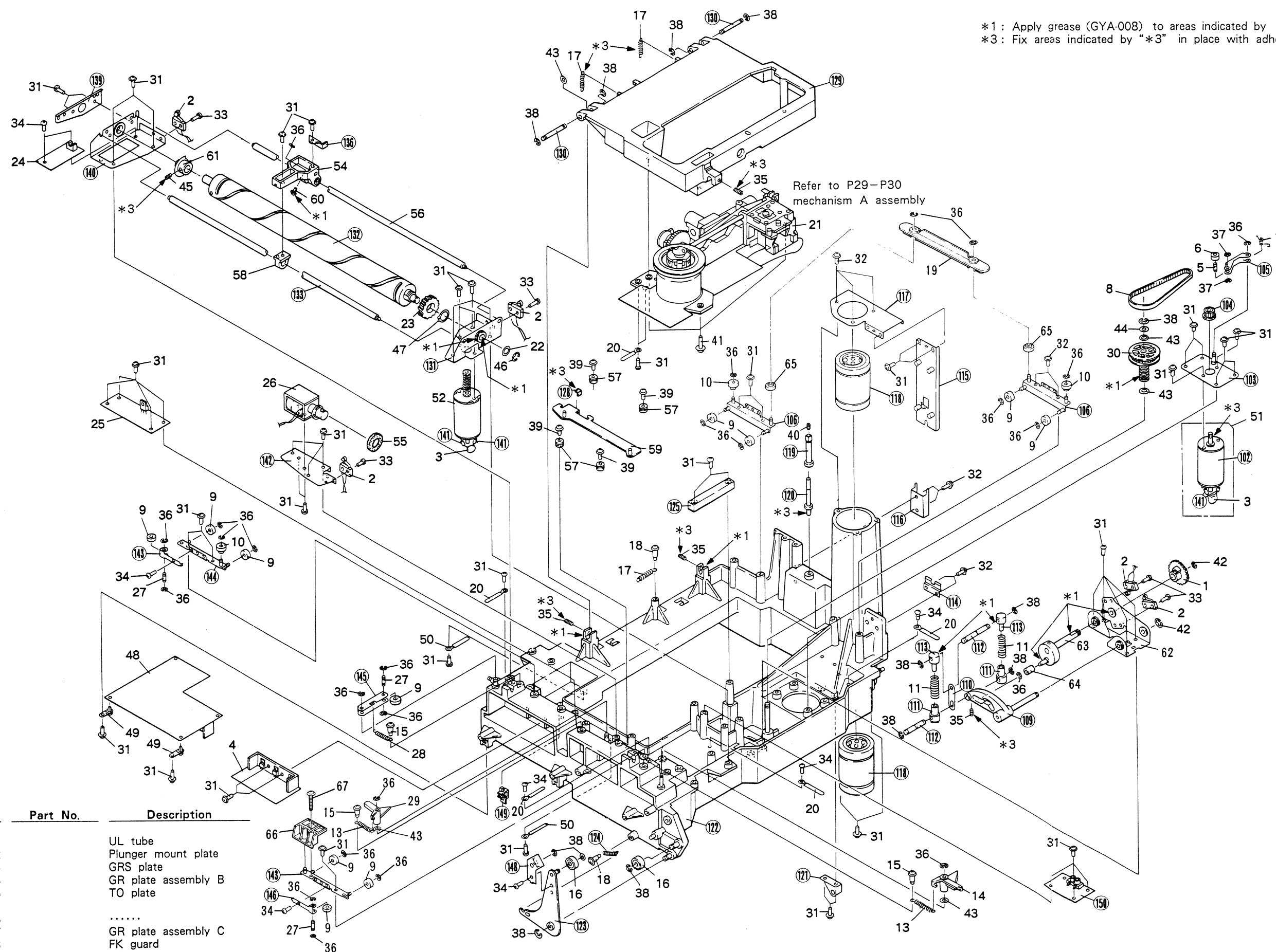
Parts List of VH Base Lower Side Section

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	DNK1021	CL worm wheel		56	DLA1033	HD shaft
	2	DSF1001	Microswitch (S3-S7)		57	DLA1070	Guide bush
	3	CKDYF473Z50	Ceramic capacitor(C9, C10)		58	DNK1023	Carry guide
	4	DWR1008	LDPS unit		59	DXB1015	Release plate assembly
	5	DLA1031	Tension roller shaft		60	DNS1005	Ellipse pin
	6	DLM1001	Tension roller		61	DXB1014	HD shutter assembly
	7	DBH1007	TA spring A		62	DXB1010	CL base assembly
	8	DMS1001	Synchronizing belt		63	DLA1026	CL lever
	9	DNK1017	Guide roller B		64	DLA1032	CL roller
	10	DNK1016	Guide roller A		65	DLM1007	GT roller
	11	DBH1006	CL spring		66	DNK1102	UB guide
	12		.....		67	AMZ30P200FMC	Screw
	13	DBH1008	Lock spring A		101		.....
	14	DNK1026	Release lever		102		CL motor
	15	DBA1001	M3 screw		103		CL motor mount plate assembly
	16	DXB-114	Bearing		104		CL pulley
	17	DBH1005	PU spring		105		Tension arm
	18	DBA1002	M5 screw		106		GR plate assembly A
	19	DNK1201	GT stopper		107		.....
	20	RNH-184	Cord holder		108		.....
	21	DXX1016	Mechanism A assembly		109		CL arm assembly
	22	VNE-270	F-washer		110		Stopper plate
	23	DNK1022	HD worm wheel		111		Cylinder
	24	DWP1004	HRSB unit		112		PUB shaft A
	25	DWX1021	HIFB unit		113		Piston
	26	VXP-009	Plunger		114		VD sensor plate C
	27	DLA1017	Guide roller shaft C		115		VD sensor plate B assembly
	28	DBH1091	TO spring		116		VD belt plate
	29	DNK1025	Lock lever		117		VD sensor plate A
	30	DNK1020	CL worm gear		118		Linear ball bearing
	31	AMZ30P060FMC	Screw		119		Adjust flange
	32	AMZ30P080FMC	Screw		120		Adjust shaft
	33	PMH20P100FMC	Screw		121		VH lock plate
	34	BBZ30P060FMC	Screw		122		VH base assembly
	35	ZMD30P060FBT	Screw		123		MD plate assembly
	36	YE30FUC	Washer		124		MD spring
	37	YE20FUC	Washer		125		CL limiter
	38	YE40FUC	Washer		126		.....
	39	AMZ30P100FMC	Screw		127		.....
	40	ZMD50H100FBT	Screw		128		OK packing B
	41	PMB30P080FGN	Screw		129		PU base A
	42	YE50FUC	Washer		130		PUB shaft C
	43	WA32D060D025	Washer		131		HD plate A assembly
	44	WC60FMC	Washer		132		Lead screw
	45	ZMD30H040FBT	Screw		133		.....
	46	YE70FUC	Washer		134		.....
	47	YCK4FBT	Washer		135		.....
	48	DWP1009	SPDV unit		136		Hook plate
	49	DEC1011	PCB hinge		137		.....
	50	VNF-005	Cord holder		138		.....
	51	DXX1013	CL motor assembly (consists of CL motor(102) and CL pulley (104))		139		HD plate C
	52	DXM1004	HD motor		140		HD plate B assembly
	53		.....			
	54	DNK1024	HD carry				
	55	DEB1009	OK packing A				

4.2.2. VH Base Lower Side

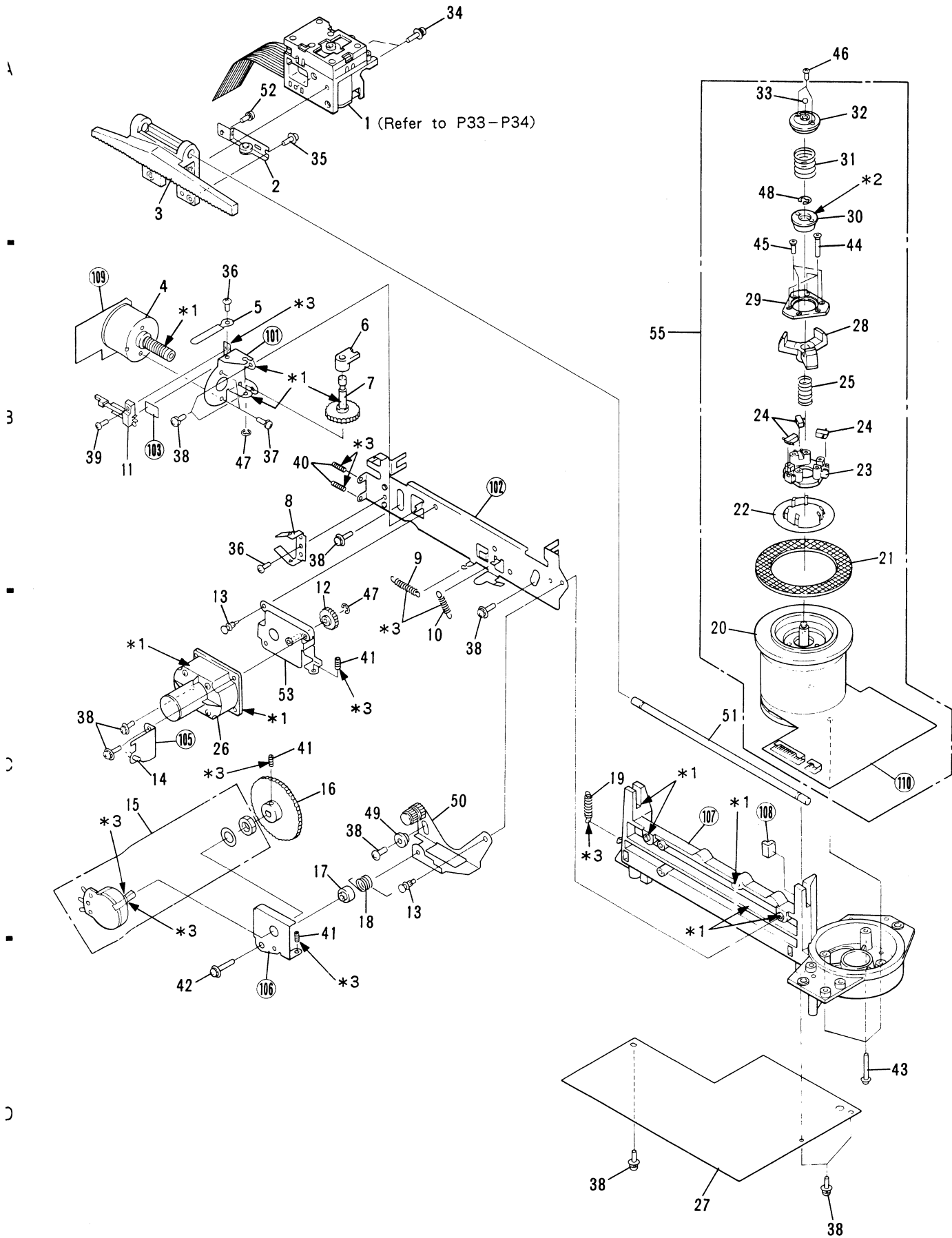
LC-V300

*1 : Apply grease (GYA-008) to areas indicated by “*1”.
*3 : Fix areas indicated by “*3” in place with adhesive.



Mark	No.	Part No.	Description
	141		UL tube
	142		Plunger mount plate
	143		GRS plate
	144		GR plate assembly B
	145		TO plate
	146		.....
	147		GR plate assembly C
	148		FK guard
	149		PC support
	150		PHSB unit

4.2.3. Mechanism A Assembly (DXX1016)



Parts List of Mechanism A Assembly (DXX1016)

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	VWY1005	Pick-up assembly		101		Tilt holder
	2	VXA-394	Roller arm assembly		102		Tilt base
	3	DMA1001	Slider		103		Insulator spacer
	4	VXM-060	Tilt motor		104		.....
	5	RNH-184	Cord holder		105		Filter holder
	6	VNV-036	Tilt nut		106		PM support
	7	VXA-387	Tilt shaft assembly		107		Mechanism chassis
	8	VNE-701	Switch adjustment plate				assembly
	9	VBH-138	Slider motor spring		108		Cushion rubber A
	10	VBH-175	Potentiometer spring		109		TLMA unit
					110		BLMB unit
	11	PSN-003	Leaf switch (S1, S2)	Refer to the section on adjustment for the adjustment related to the LDP. *1: Apply grease (GYA-008) to areas indicated by "*1". *2: Apply Launa #90 lubricating oil to areas indicated by "*2". *3: Fix areas indicated by "*3" in place with adhesive.			
	12	VNL-623	Slider pinion				
	13	VEC-143	Plastic rivet				
	14	VCG-005	Thru type capacitor (C1, C2)				
	15	DCS1006	Potentiometer				
	16	VNL-508	Potential pinion B				
	17	VLL-310	PM spacer				
	18	VBH-140	Torsion spring				
	19	VBH-142	Tilt spring				
	20	DXM1006	Spindle motor				
	21	VEB1008	Rubber spacer				
	22	DBK1001	Plate spring				
	23	DNS1007	SP bed plate				
	24	DLA1043	Centering pin				
	25	DBH1013	Centering spring				
	26	VXM-076	Slider motor				
	27	DWV1009	PREB unit				
	28	DNS1008	Centering hub				
	29	DLA1044	SP plate				
	30	DLA1045	Center corn				
	31	DBH1012	SP spring				
	32	DNK1027	Center cap				
	33	DBX1001	φ 4 steel ball				
	34	PMB26P060FMC	Screw				
	35	AMZ26P070FMC	Screw				
	36	BBZ30P060FMC	Screw				
	37	PMA26P040FMC	Screw				
	38	PMB30P080FMC	Screw				
	39	PMZ20P050FMC	Screw				
	40	ZMD30H120FBT	Screw				
	41	ZMD30H080FBT	Screw				
	42	PMB30P100FMC	Screw				
	43	AMZ30P200FMC	Screw				
	44	CMZ20P180FMC	Screw				
	45	CMZ20P060FMC	Screw				
	46	PMZ20P060FMC	Screw				
	47	YE20FUC	E ring				
	48	YE30FUC	E ring				
	49	VLL-311	Spacer				
	50	VXA-439	PM holder assembly				
	51	DLA1001	Shaft				
	52	PMB26P060FMC	Screw				
	53	VXA-430	Motor holder assembly				
	54	PMA26P060FMC	Screw				
	55	DXX1125	Spindle motor assembly				

4.2.4. Mechanism B Assembly (DXX1017)

Parts List of Mechanism B Assembly (DXX1017)

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
	1	DWY1001	Pick-up assembly		51	DBH1021	Tilt spring
	2	VXA-394	Roller arm assembly		52	VLL-311	Spacer
	3	DMA1001	Slider		53	YCX8FBT	Retaining ring
	4	VXM-060	Tilt motor		54	YCX3FBT	Retaining ring
	5	RNH-184	Cord holder		55	DLA1001	Shaft
	6	VNV-036	Tilt nut		56	DXX1261	CH motor assembly
	7	VXA-387	Tilt shaft assembly		57	VXM-076	Slider motor
	8	VNE-701	Switch adjustment plate		58	DWV1009	PREB unit
	9	VBH-138	Slider motor spring		59	PMB30P060FMC	Screw
	10	VBH-175	Potentiometer spring		60	VXA-430	Motor holder assembly
	11	PSN-003	Leaf switch		61	DXX1015	CH worm gear assembly
	12	VNL-623	Slider pinion		62	DNK1032	Worm gear
	13	VEC-143	Plastic rivet				
	14	VCG-005	Thru type capacitor		101		Tilt holder
	15	DCS1006	Potentiometer		102		.....
					103		Filter holder
	16	VNL-508	Potential pinion B		104		Tilt base
	17	VLL-310	PM spacer		105		PM support
	18	VBH-140	Torsion spring				
	19	VXA-439	PM holder assembly		106		Insulator spacer
	20	DBH1014	TA spring B		107		Cushion rubber (A)
					108		Mechanism chassis assembly
	21	VNL-635	Motor pulley				
	22	DNK1033	φ 4 bearing		109		Loading motor
	23	VXA-477	Pulley L assembly		110		CH motor mount plate assembly
	24	DLA1031	Tension roller shaft				
	25	DLM1001	Tension roller				
					111		CIFB unit
	26	DMS1002	Synchronizing belt		112		Tension arm
	27	DBH1016	Spring B		113		Rod guide
	28	DSF1002	Microswitch (S8, S9)		114		SW plate
	29	DLA1049	Guide pin		115		Rod base
	30	DBH1017	Spring C				
					116		Push wheel
	31	DBH1020	Spring D		117		Push rod
	32	DLM1003	Ball holder		118		Spring A
	33	DNK1030	Sleeve		119		TLMB unit
	34	DNK1028	Clamper sleeve				
	35	DXB1020	Bearing				
							Refer to the section on adjustment for the adjustment related to the LDP.
	36	DNK1029	Clamper				*1: Apply grease (GYA-008) to areas indicated by “*1”.
	37	PMB26P060FMC	Screw				*2: Apply Launa *90 lubricating oil to areas indicated by “*2”.
	38	PMA26P040FMC	Screw				*3: Fix areas indicated by “*3” in place with adhesive.
	39	AMZ26P070FMC	Screw				
	40	BBZ30P060FMC	Screw				
	41	PMZ20P050FMC	Screw				
	42	PMB30P080FMC	Screw				
	43	ZMD30H120FBT	Screw				
	44	ZMD30H080FBT	Screw				
	45	PMB30P100FMC	Screw				
	46	AMZ30P200FMC	Screw				
	47	PMH20P100FMC	Screw				
	48	W42D080D025	Washer				
	49	YE20FUC	E ring				
	50	YE30FUC	E ring				

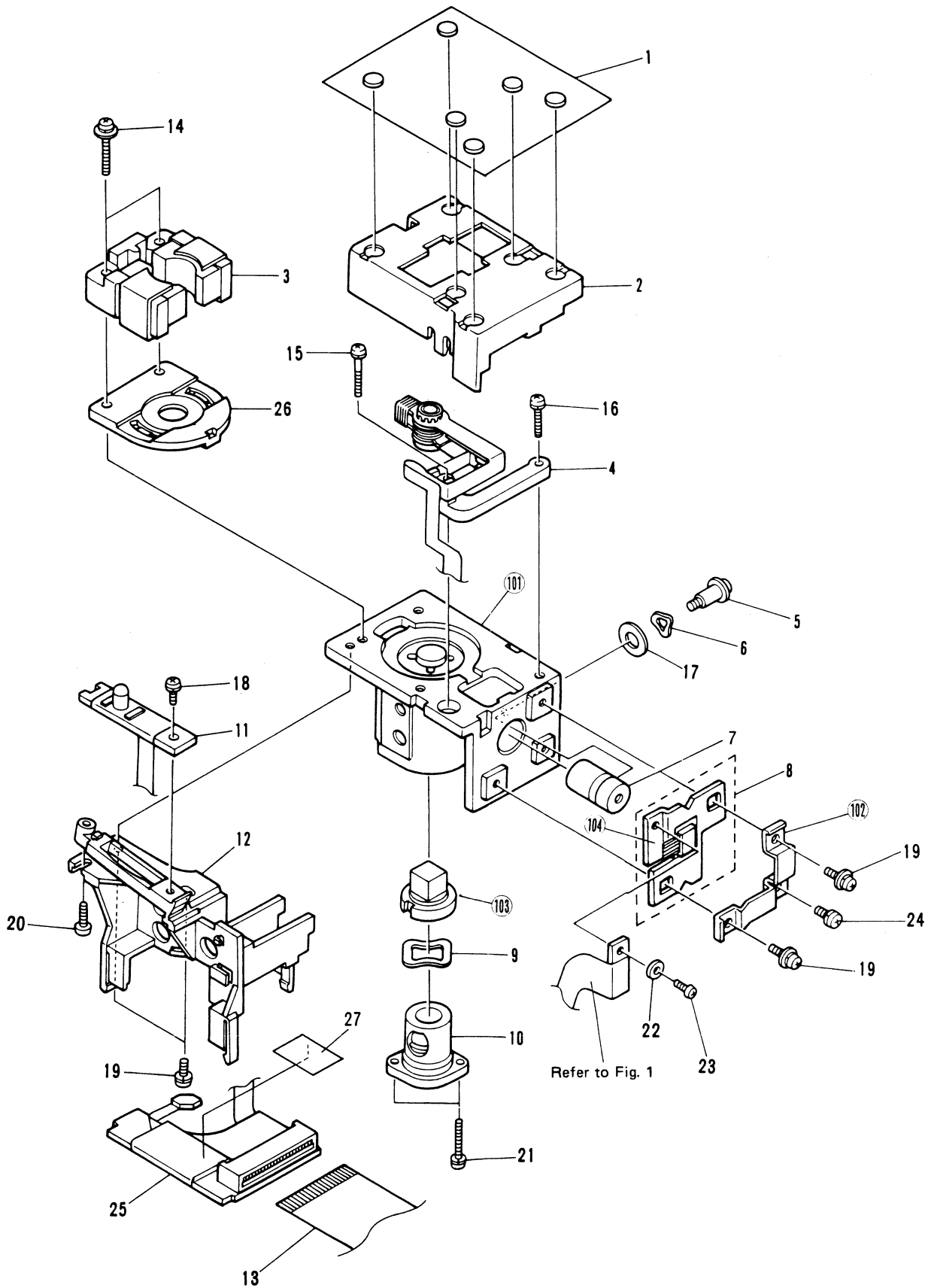
Refer to the section on adjustment for the adjustment related to the LDP.

*1: Apply grease (GYA-008) to areas indicated by "*1".

*2: Apply Launa #90 lubricating oil to areas indicated by "*2".

*3: Fix areas indicated by "*3" in place with adhesive.

4.2.5. Pick-up Assembly (VWY1005, DWY1001)



Parts List of Pick-up Assembly (VWY1005, DWY1001)

Mark	No.	Part No.	Description	Mark	No.	Part No.	Description
A	1	VED-034	Protective pad		16	PMA20P080FMC	Screw
	2	VNH-057	Actuator cover		17	WA40F100M050	Washer
	3	VGX-071	Magnetic circuit assembly		18	PPZ20P050FMC	Screw
	4	VGX-069	Objective lens assembly		19	PMB20P050FMC	Screw
	5	VLL-292	Screw 5		20	PBZ20P080FMC	Screw
	6	PBE-020	Washer (4)		21	PMA26P080FMC	Screw
	7	VGX-064	Multi lens assembly		22	WA20W050R050	Washer
	8	VGX-065	PD assembly		23	PMA20P040FMC	Screw
	9	PBE-022	Washer (8)		24	PMA26P060FMC	Screw
	10	VGX-066	LD assembly		25	VWV-079	HEAD unit
	11	VEX1001	Sensor assembly		26	VGX1005	Wave length plate assembly (VWY1005 only)
	12	VNH-056	Sensor stay		27	VEB1012	Insulator sheet
	13	VDA-108	Card		101		Optical body (VWY1005's form differs from DWY1001)
	14	PMB20P120FMC	Screw		102		PD spring
	15	PMA20P140FMC	Screw		103		Prism assembly
B					104		PD plate

Attachment of Head Unit

The head unit is supplied with a flexible section made so it doesn't bend. It is treated by the following procedure and attached.

1. Bend as indicated by the arrow in Fig. 1, and attach using double-sided tape and adhesive.
2. Attach to the pick-up with the flexible section curved as shown in Fig. 1.
3. Solder the disc inclination detection board and flexible board with connected TRKG and FOCS coils to the head unit as shown in Fig. 2.

Note : Solder as quickly as possible as the copper foil of the flexible board cannot withstand high heat. Place the soldering iron in contact with the head unit rather than the flexible board.

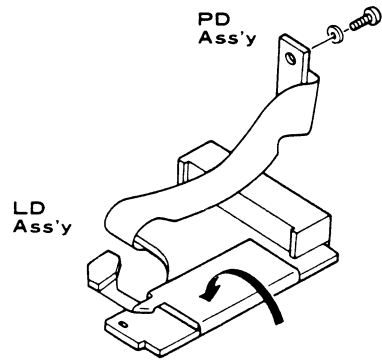


Fig. 1.

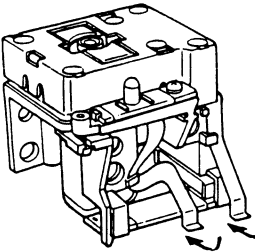
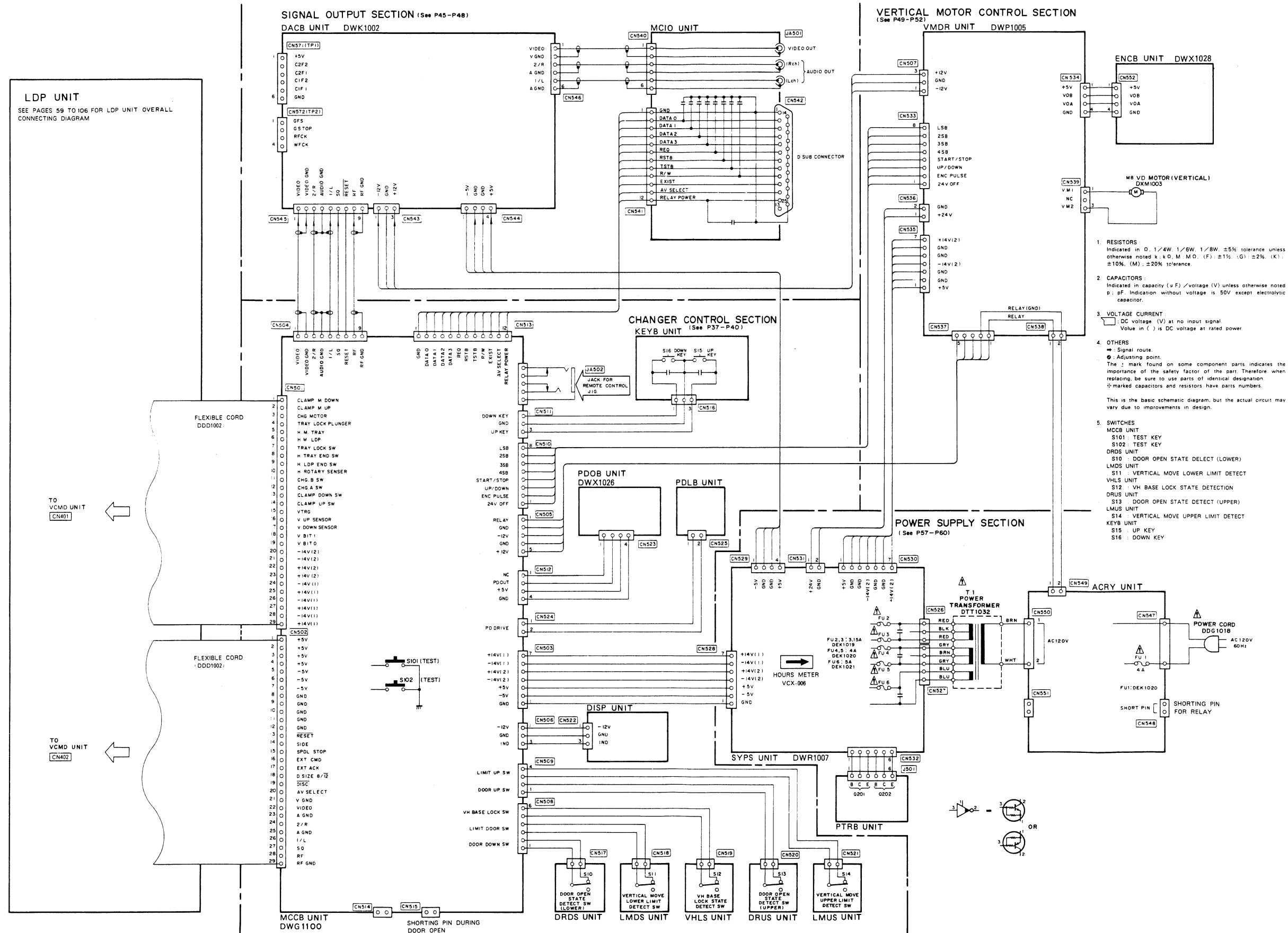
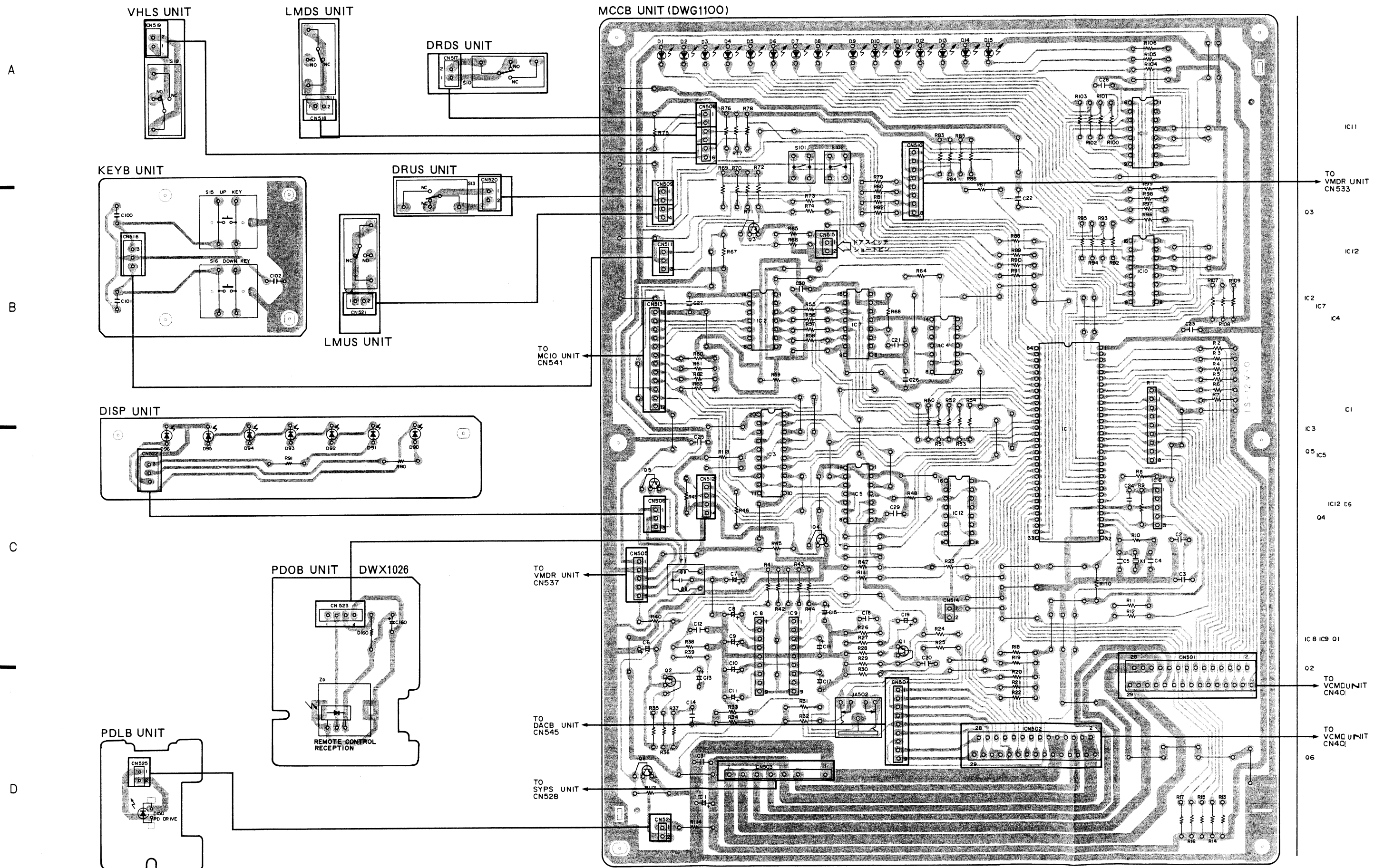


Fig. 2.

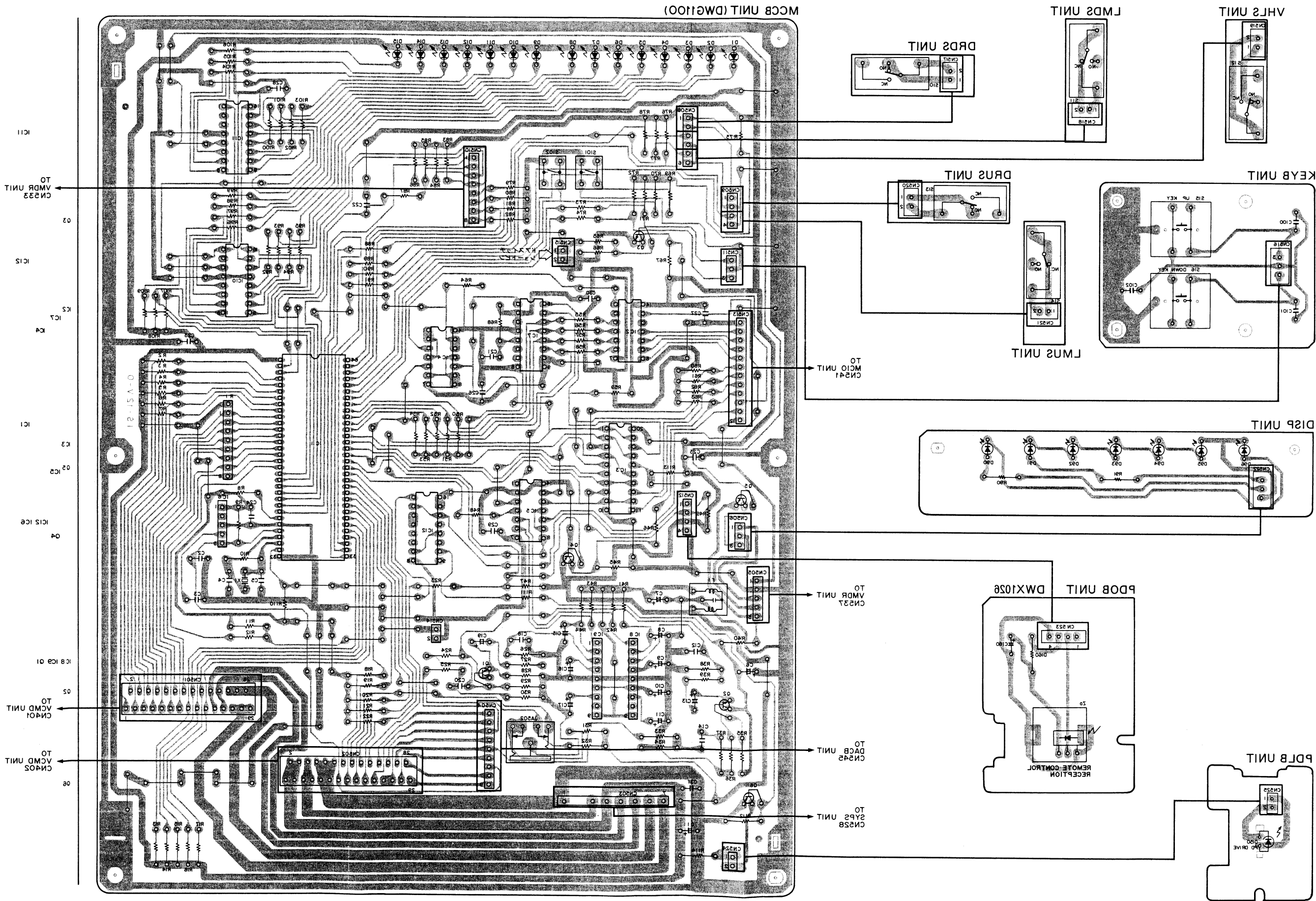
5.1.1 Main Assembly Overall Connection Diagram



Changer Control Section
• View from soldering side



Charger Control Section
• View from component side



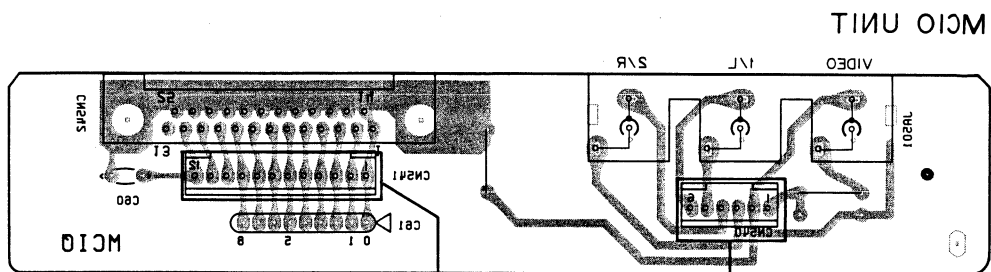
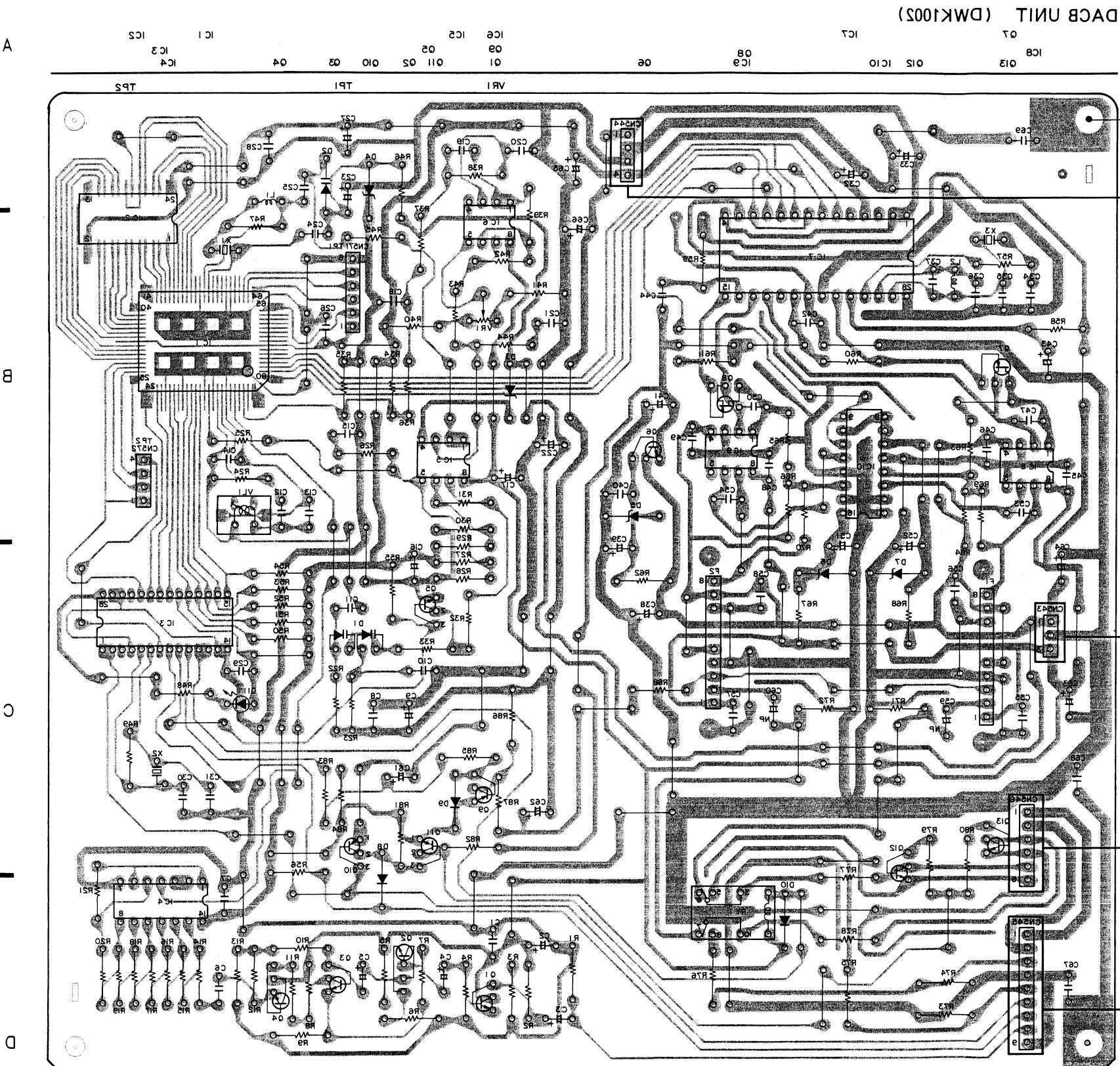
A

B

C

D

2.1.3. Signal Output Section
DACB Unit (DWK1002) MCIO Unit
• View from soldering side without DACB unit



TO
MCIO UNIT

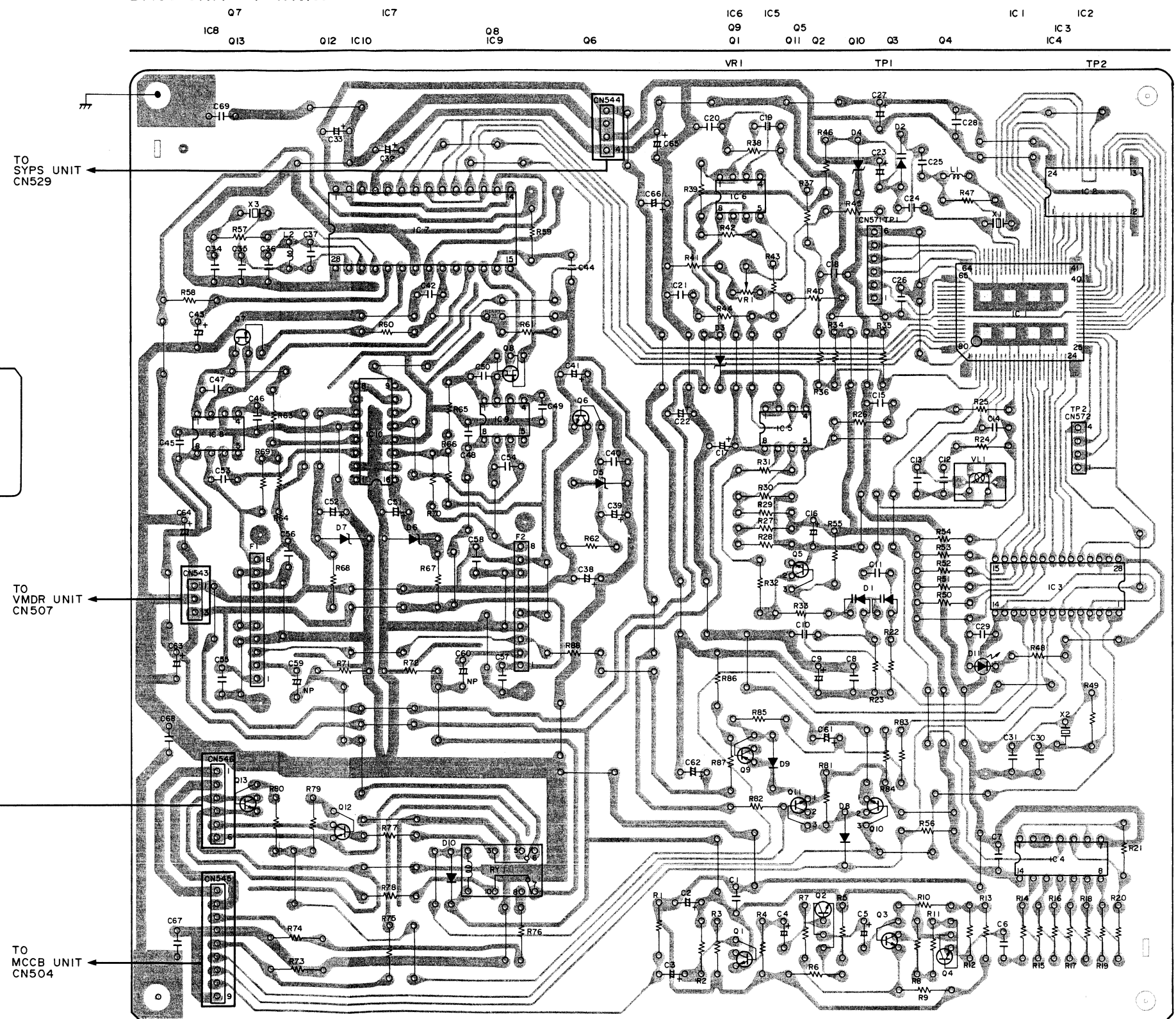
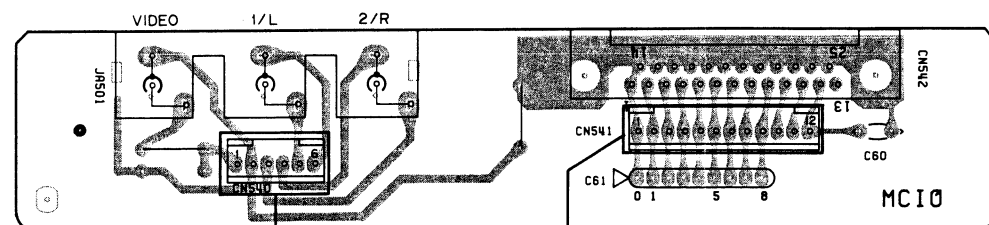
TO
MCIO UNIT

TO
MCIO UNIT

5.1.3. Signal Output Section
 DACB unit (DWK1002), MCIO unit
 • View from component side without DACB unit (DWK1002)

DACB UNIT (DWK1002)

MCIO UNIT



A

B

C

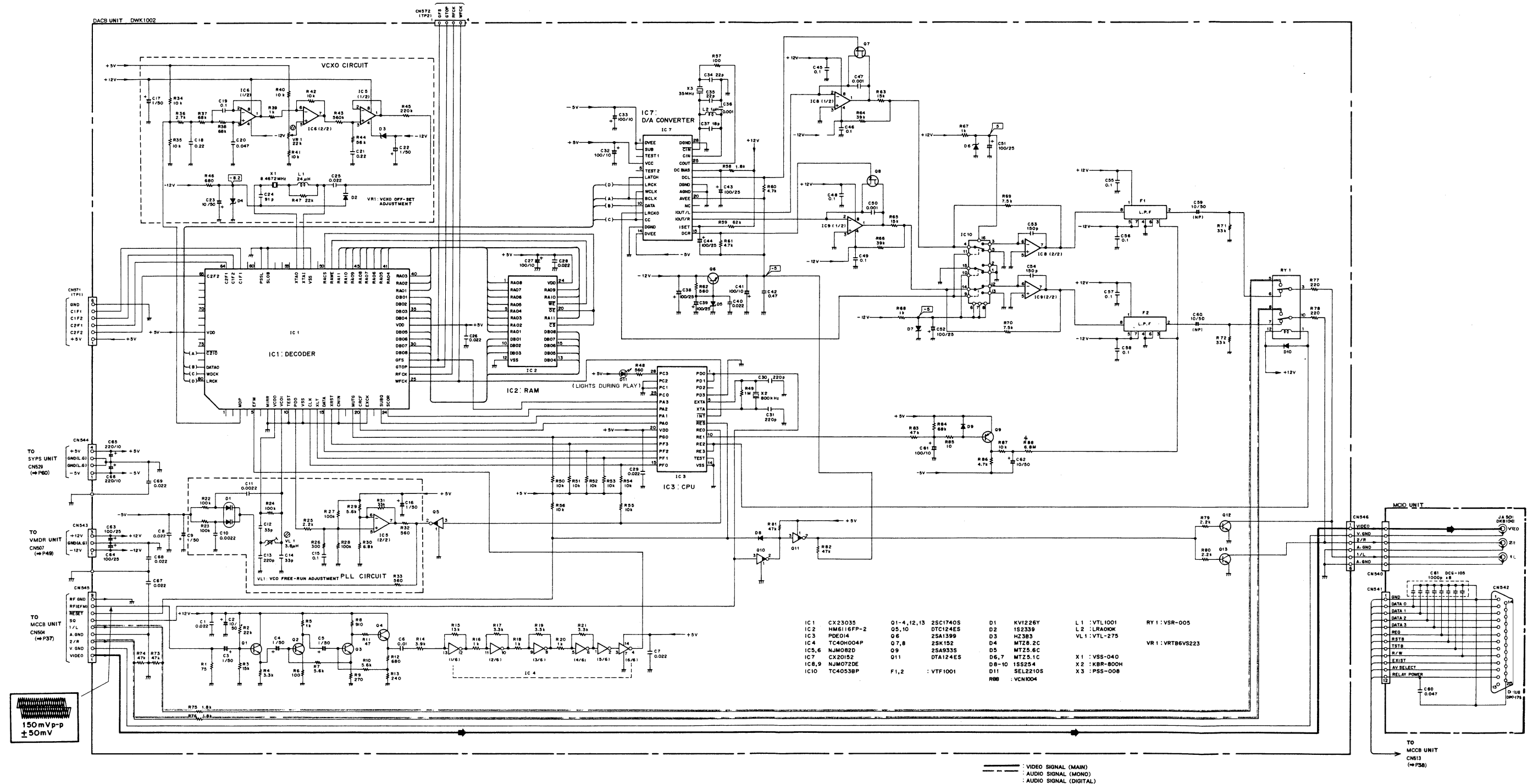
D

A

B

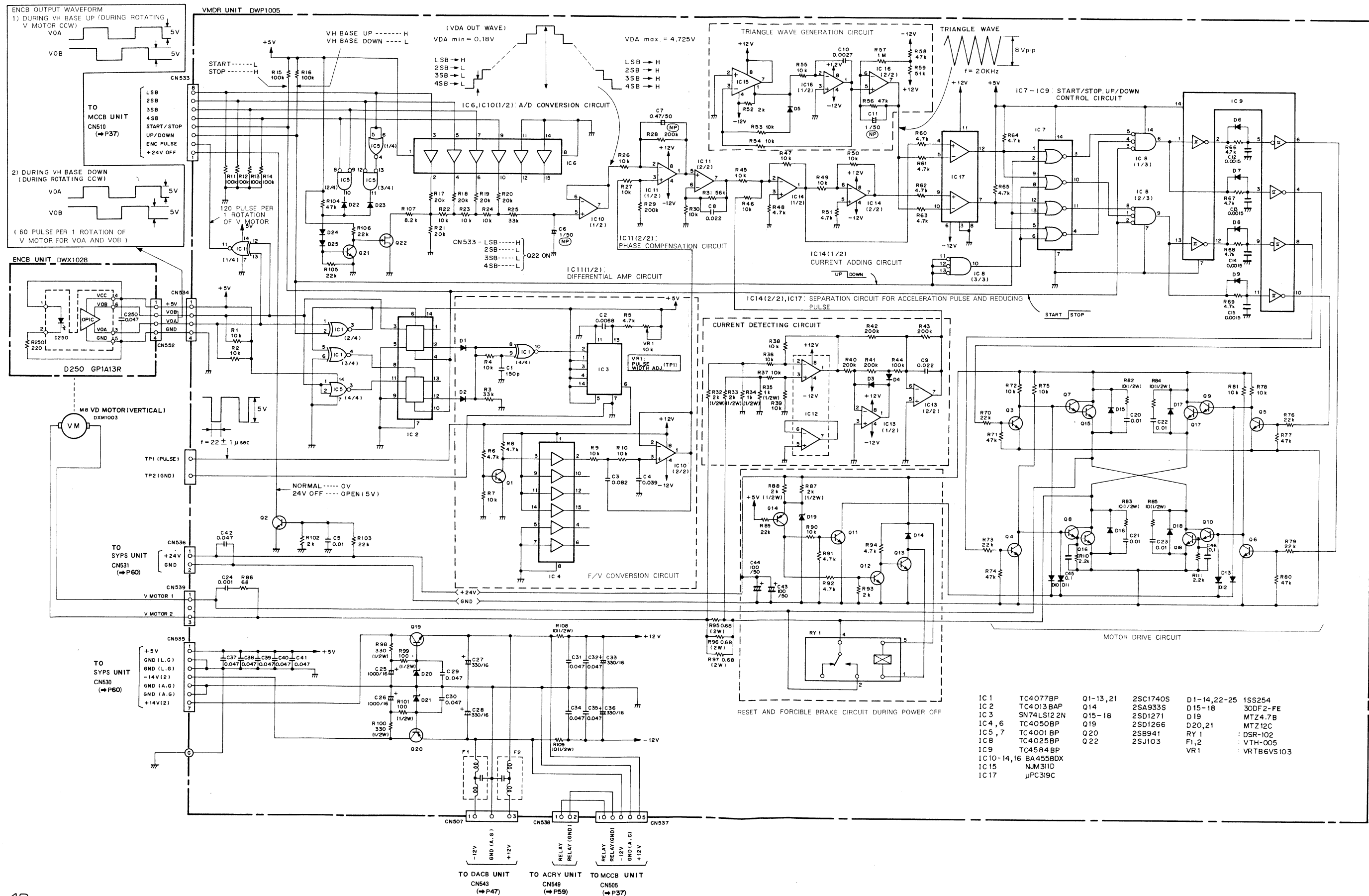
C

D

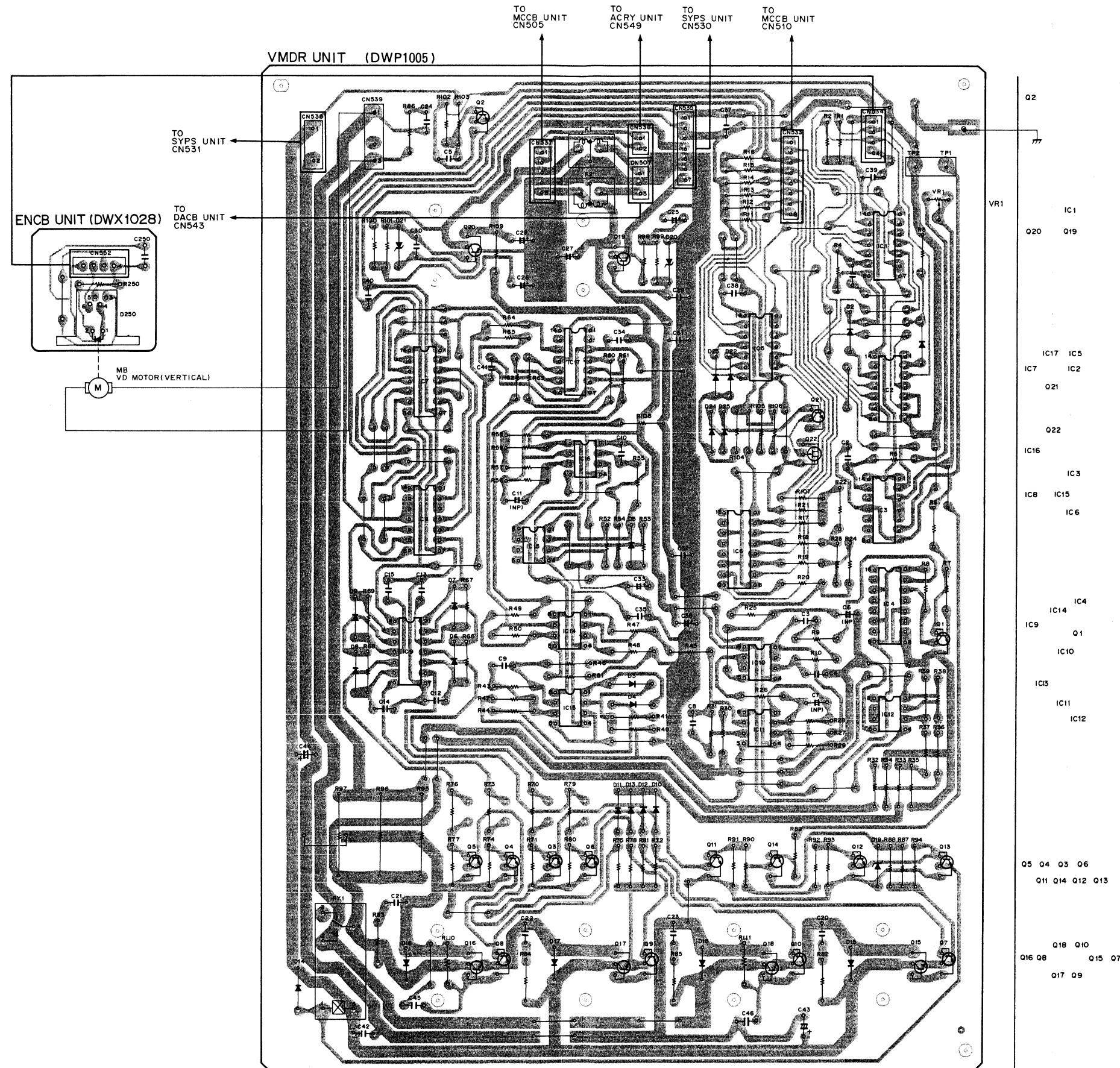


5.1.4. Vertical Motor Control Section

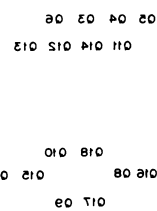
VMDR unit (DWP1005), ENCB unit (DWX1028)



Vertical Motor Control Section
• View from soldering side



9



A



57

5.1.5. Power Supply Section

SYPS unit (DWR1007), PTRB unit, ACRY unit

- View from component side without PTRB unit

SYPS UNIT (DWR1007)

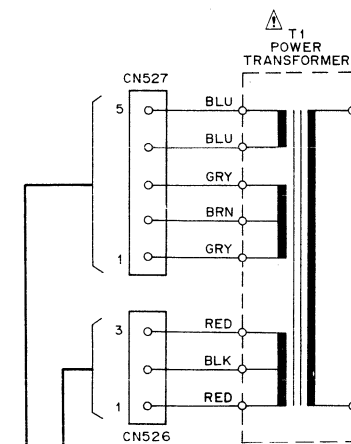
PTRB UNIT

TO MCCB UNIT
CN503

TO VMDR UNIT
CN535

TO DACB UNIT
CN544

TO VMDR UNIT
CN536



ACRY UNIT

TO VMDR UNIT
CN538

RELAY SHORT

125V 4R

AC120V
60Hz
POWER CORD



5.2.1. LDP Unit Overall Connection Diagram



B

C

D

A



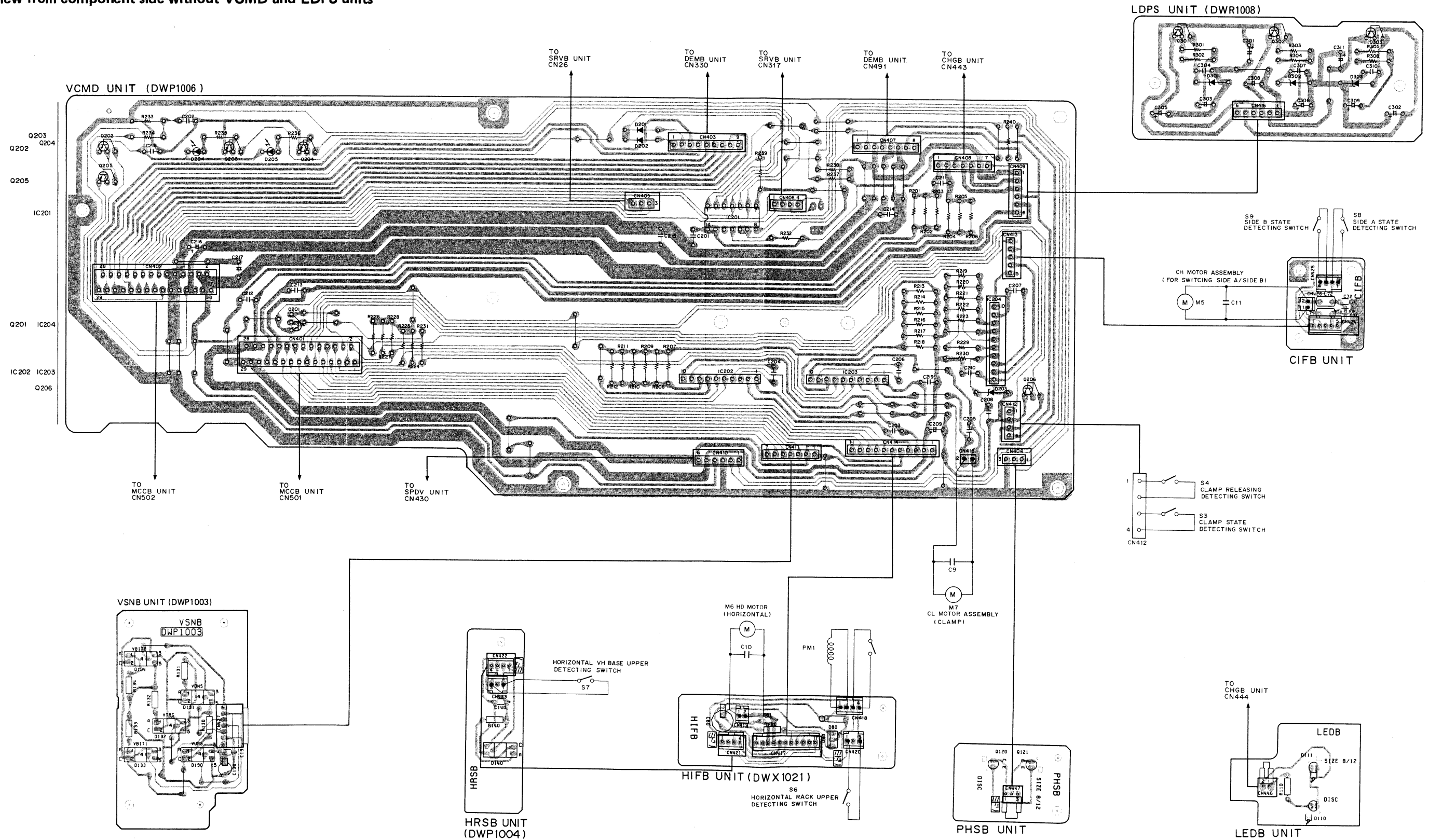
C

D

5.2.2. Changer Control Section inside LDP Unit

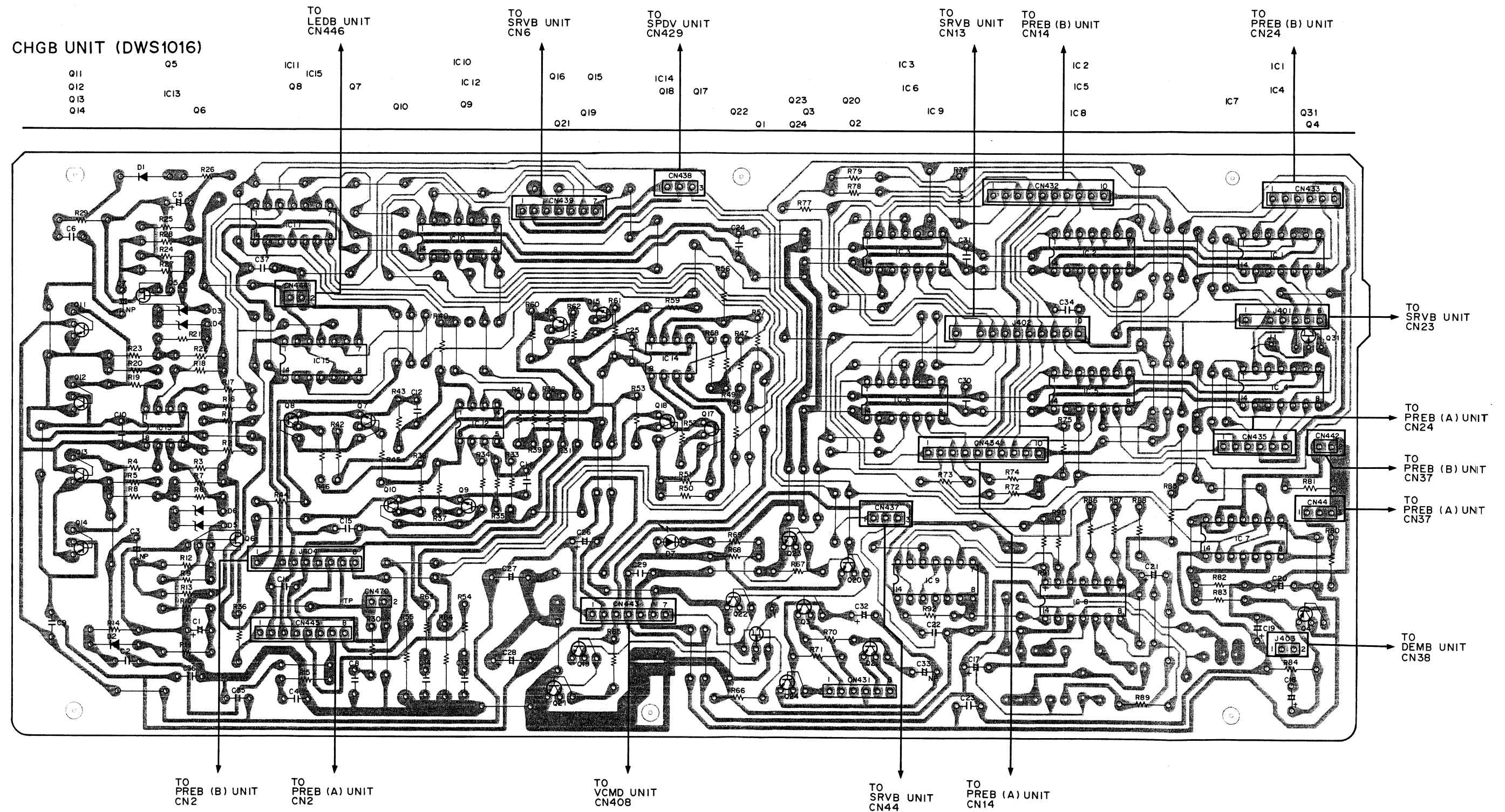
VCMD unit (DWR1006), VSNB unit (DWP1018), LDPS unit (DWR1008),
HRSB unit (DWP1004), HIFB unit (DWX1021), PHSB unit, LEDB unit

• View from component side without VCMD and LDPS units





A/B Sides Selection Control Section
• View from soldering side

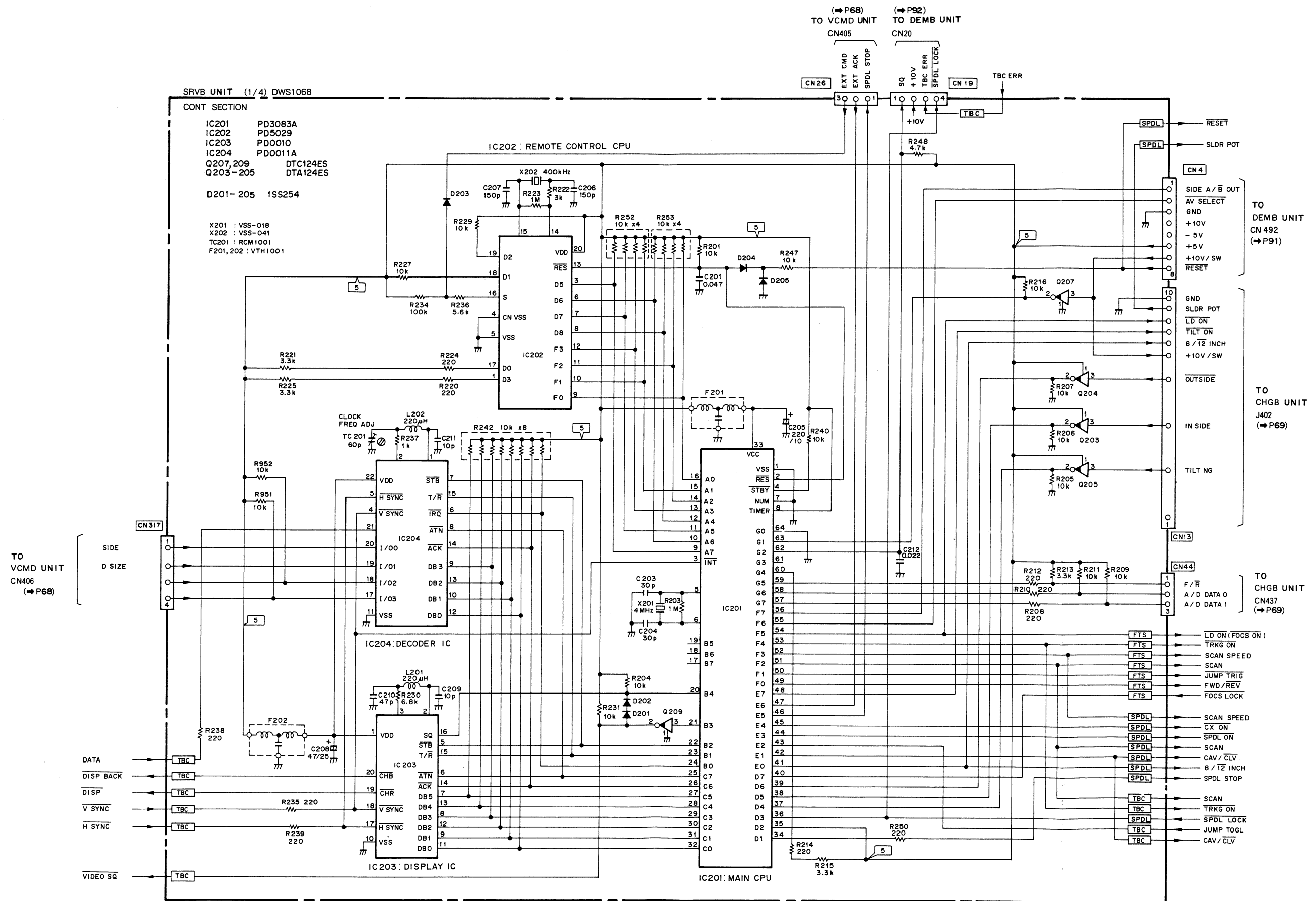


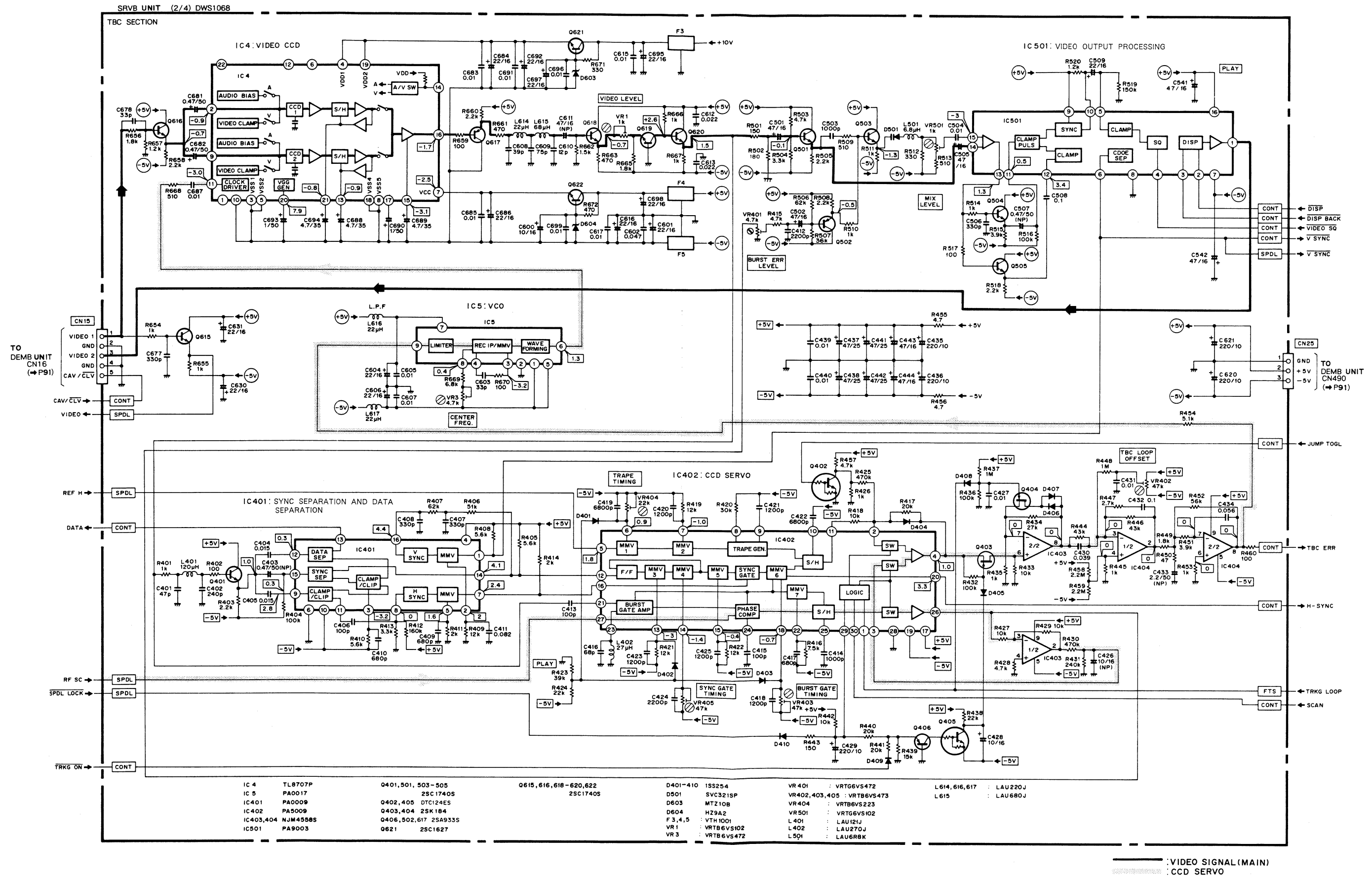
A



SRVB UNIT (DW21068)



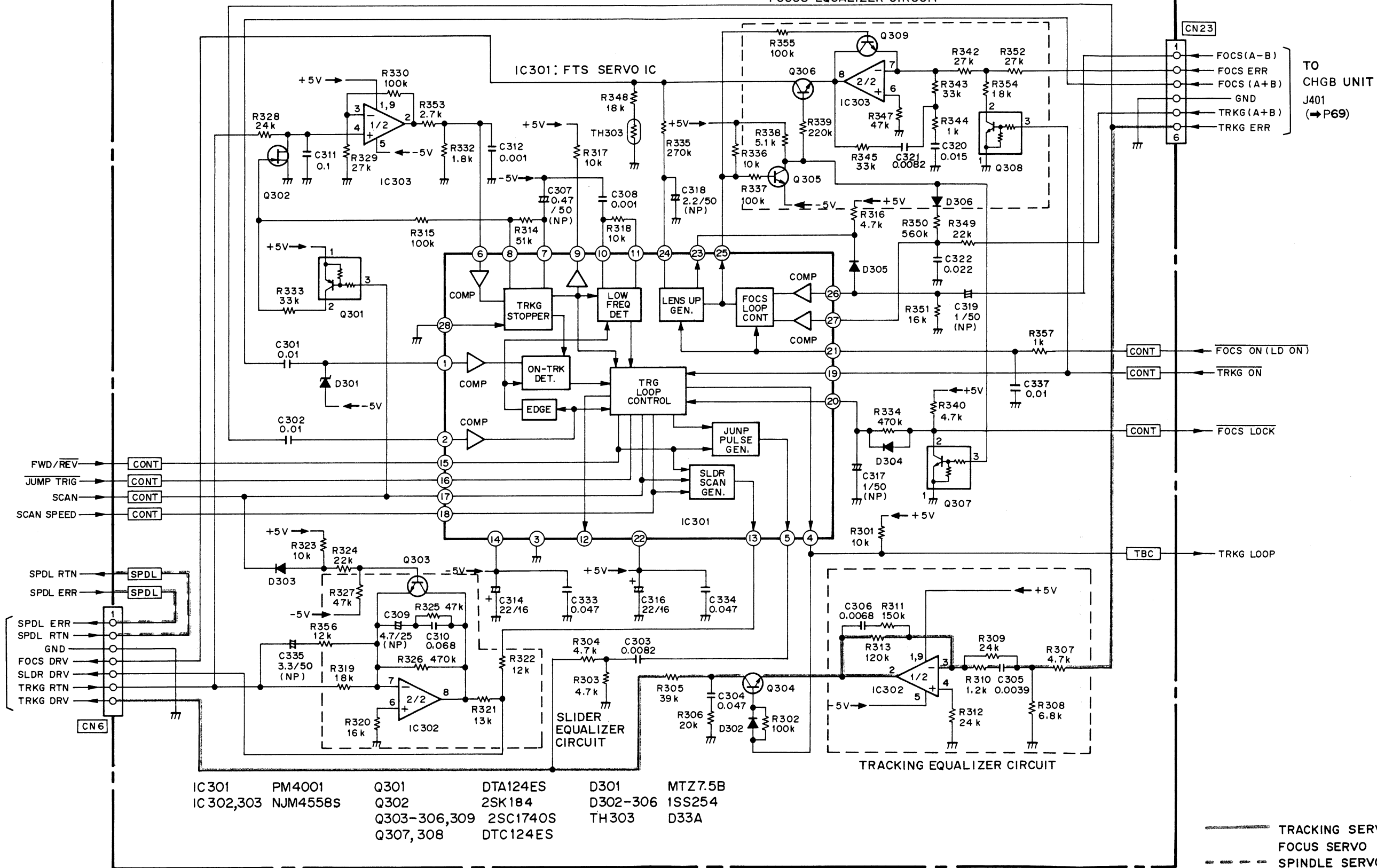


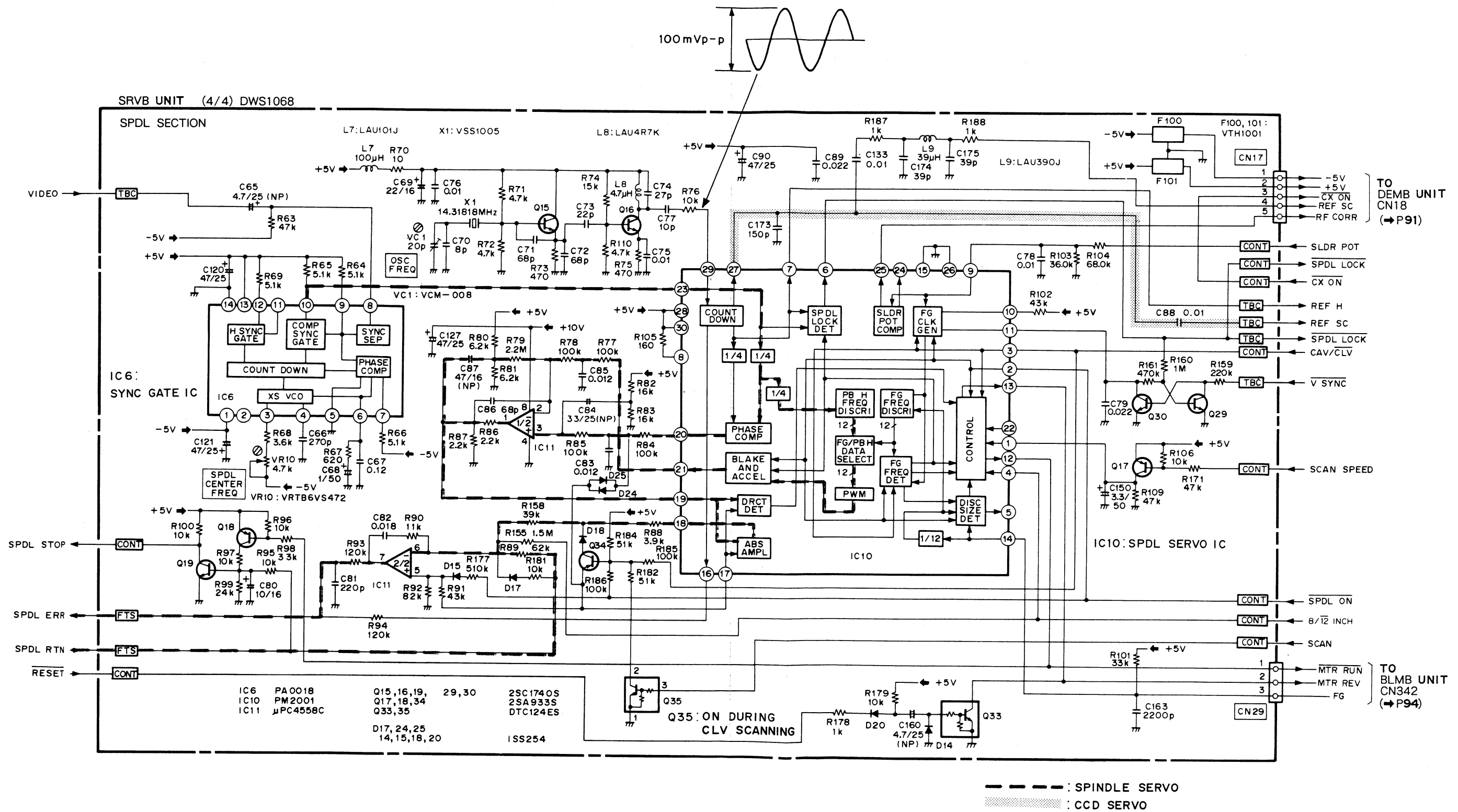


SRVB UNIT (3/4) DWS1068

FTS SECTION

FOCUS EQUALIZER CIRCUIT





A

B

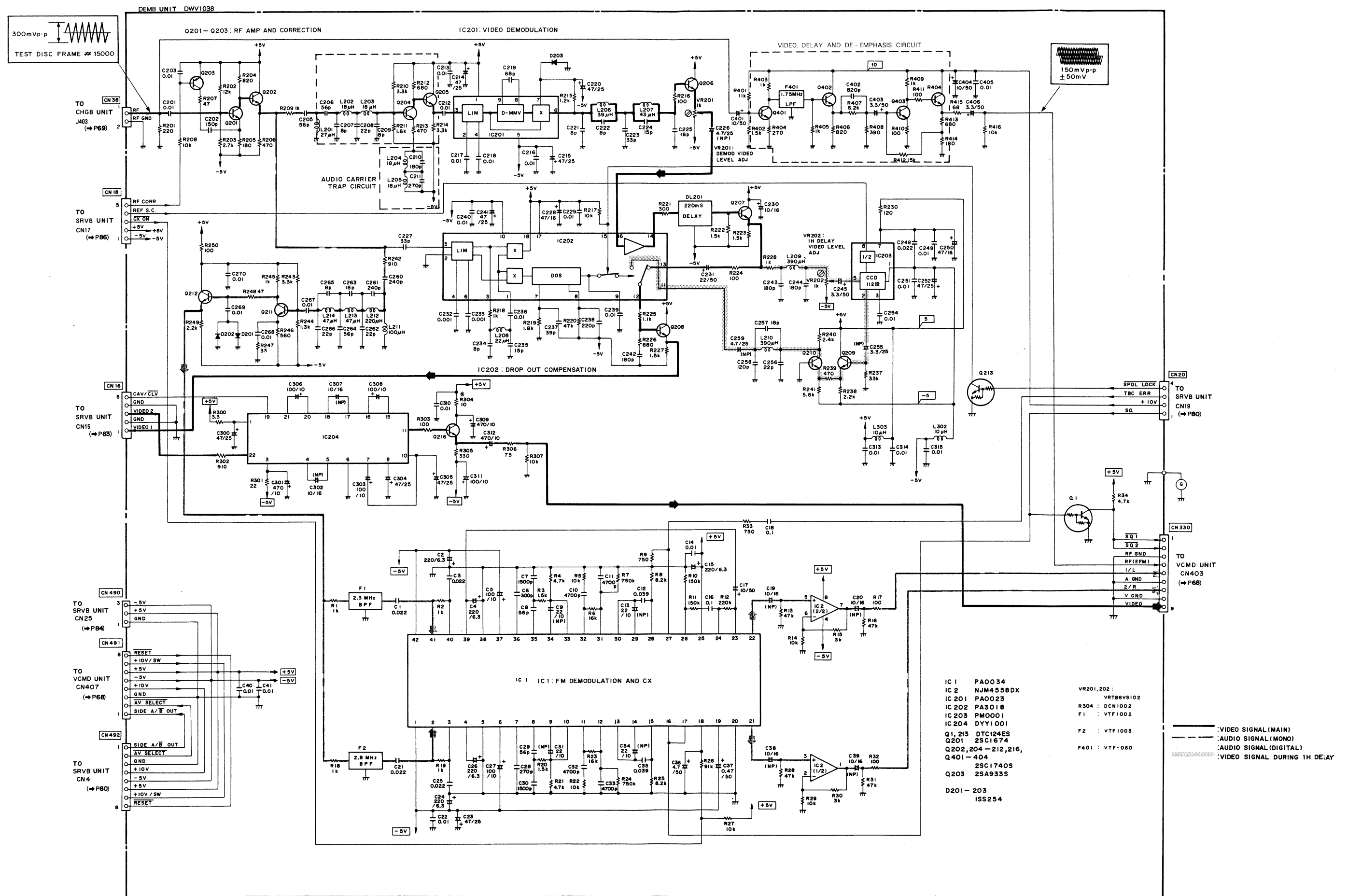


D

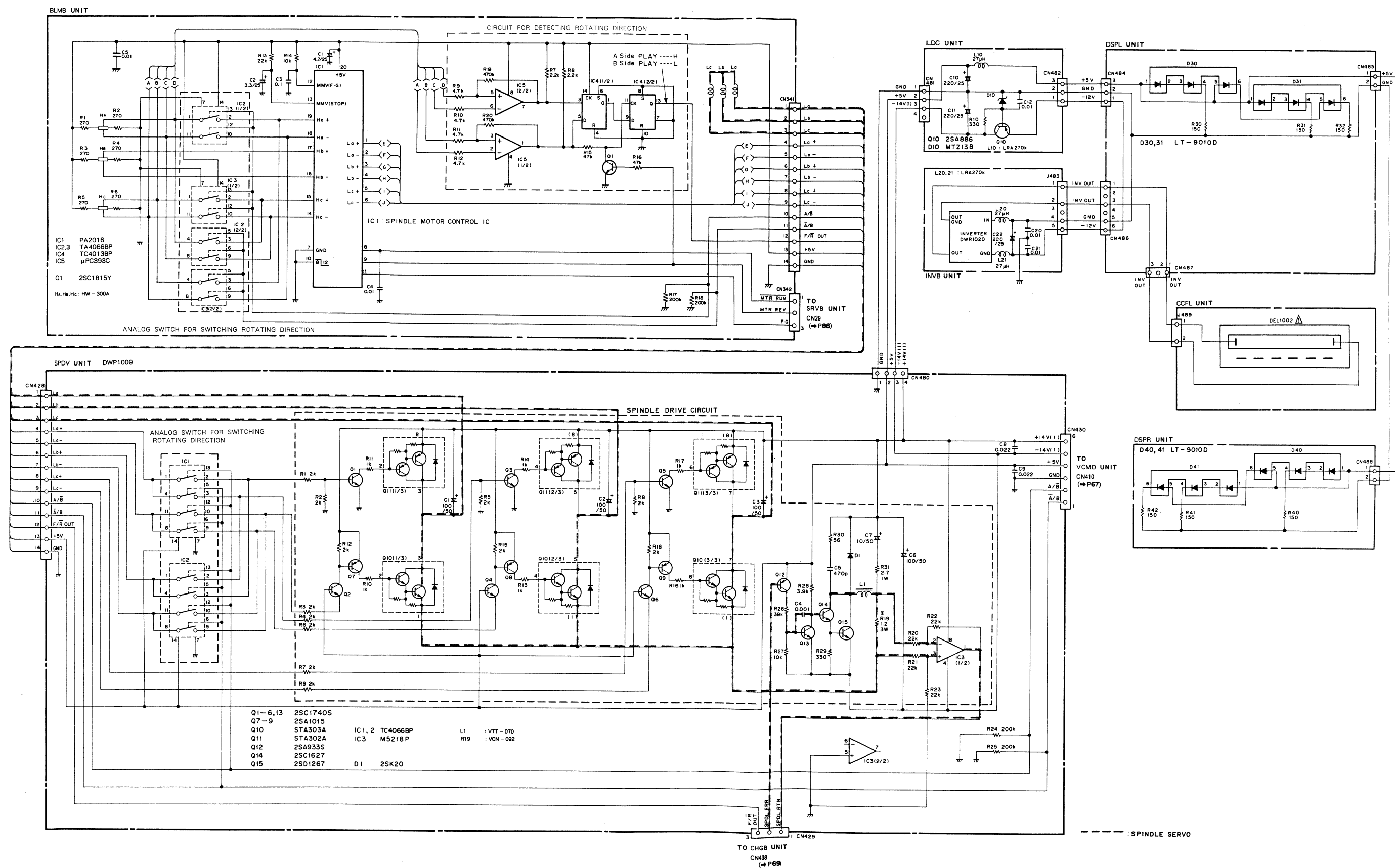
- **View from component side**

A



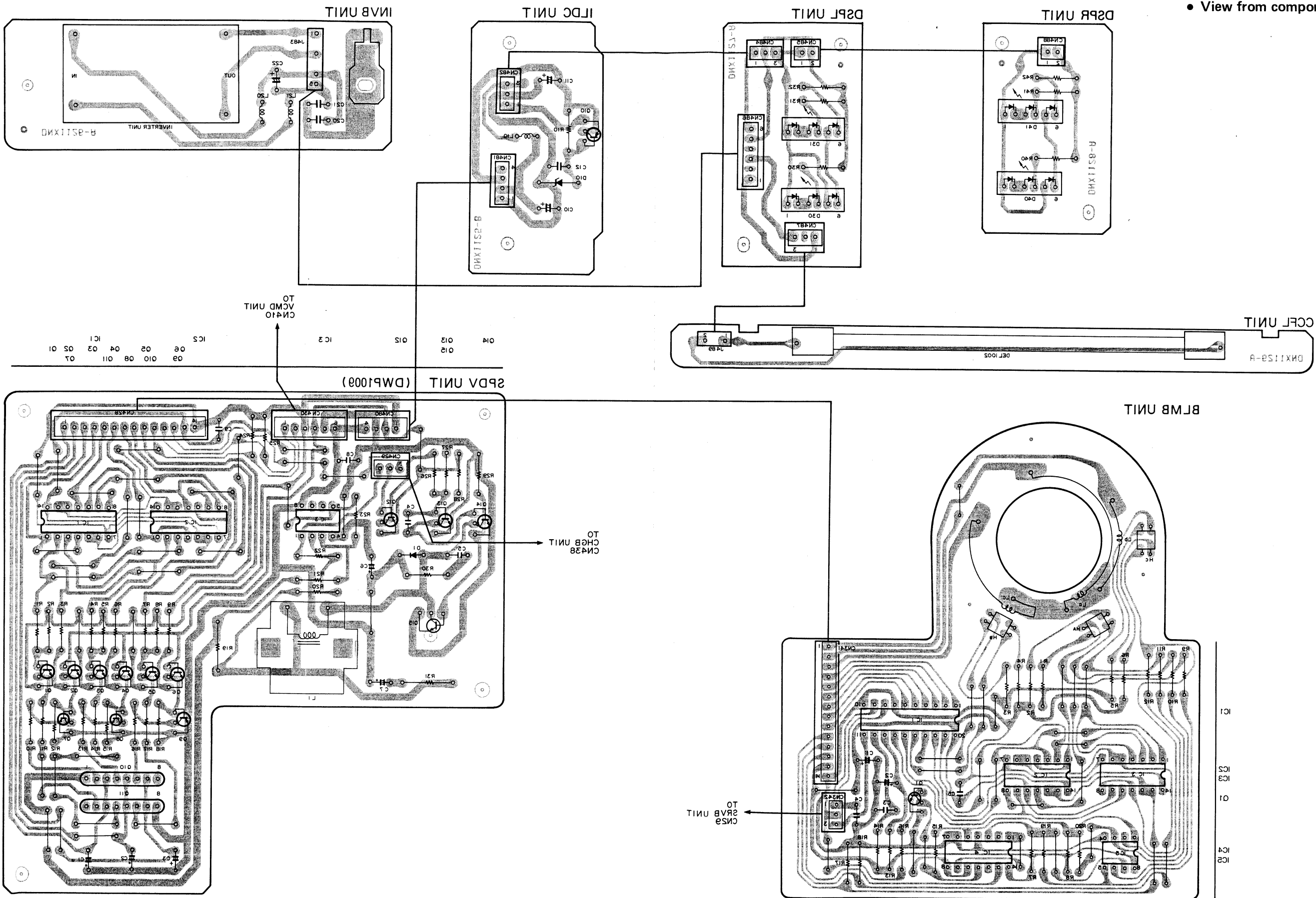


5.2.6. Spindle Motor Control Section : SPDV unit (DWP1009), BLMB unit
Illumination Section : ILDC unit, DSPL unit, INVB unit, CCFL unit, DSPR unit





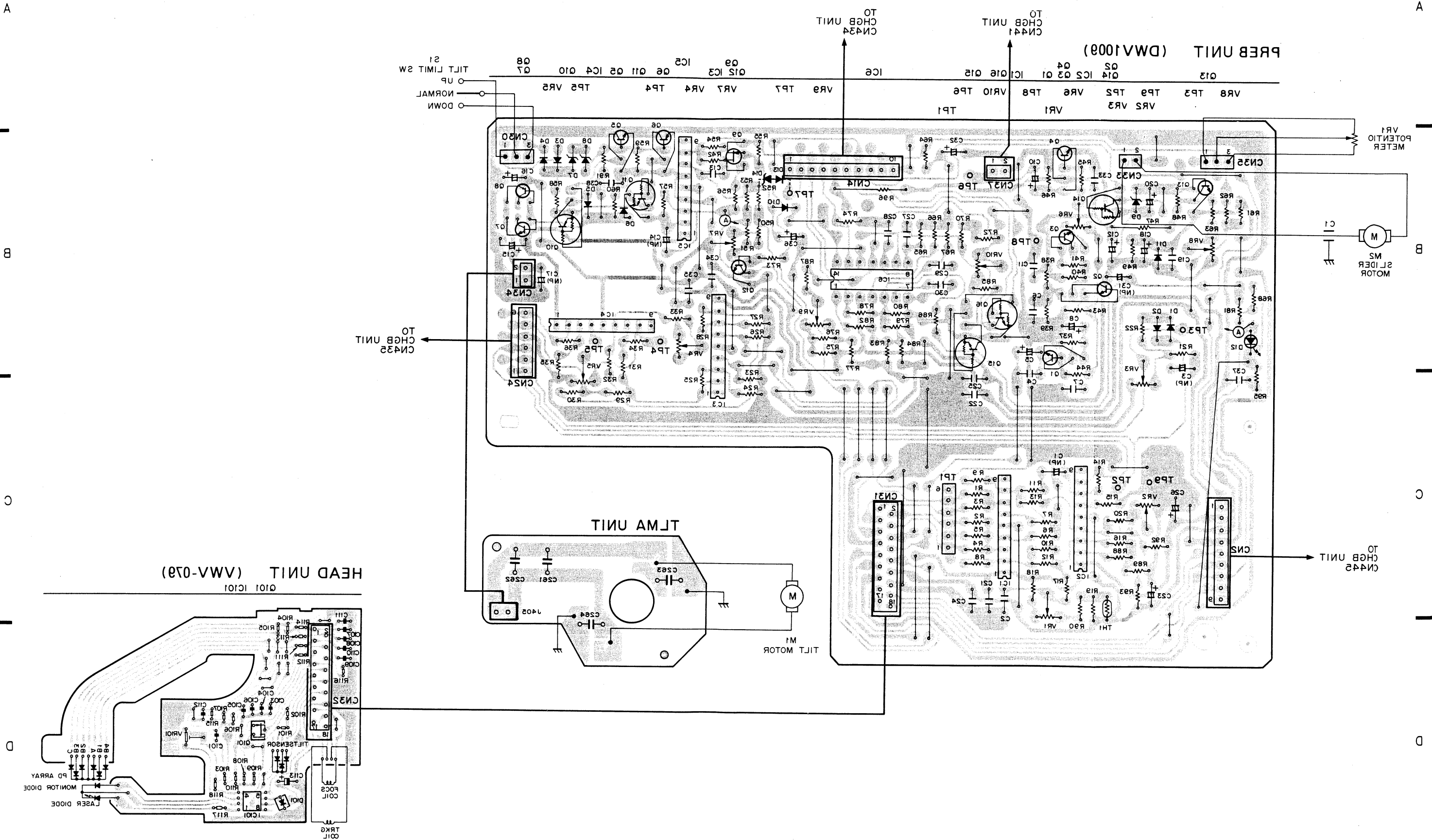
Spindle Motor Control Section
Illumination Section
• View from component side



2.2.7. Mechanism A Assembly (DXX1016) Section PREB unit (DWV1009), TLMA unit (VWV-079)

The schematic diagram of BLMB unit inside the spindle motor (DXMX1008) is shown on pages 93 and 94.

• View from component side

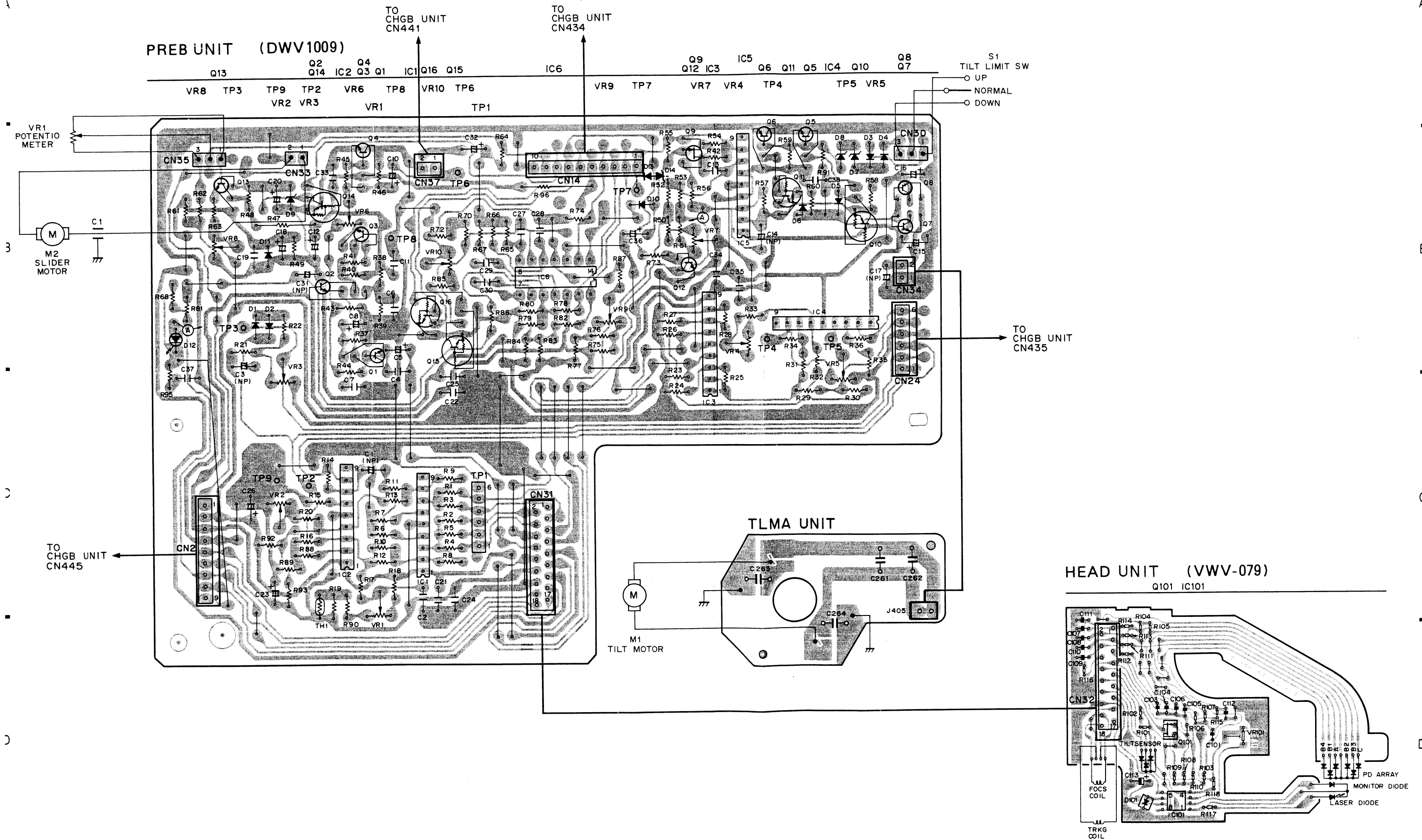


5.2.7. Mechanism A Assembly (DXX1016) Section

PREB unit (DWV1009), TLMA unit, HEAD unit (VWV-079)

The schematic diagram of BLMB unit inside the spindle motor (DXM1006) is shown on pages 93 and 94.

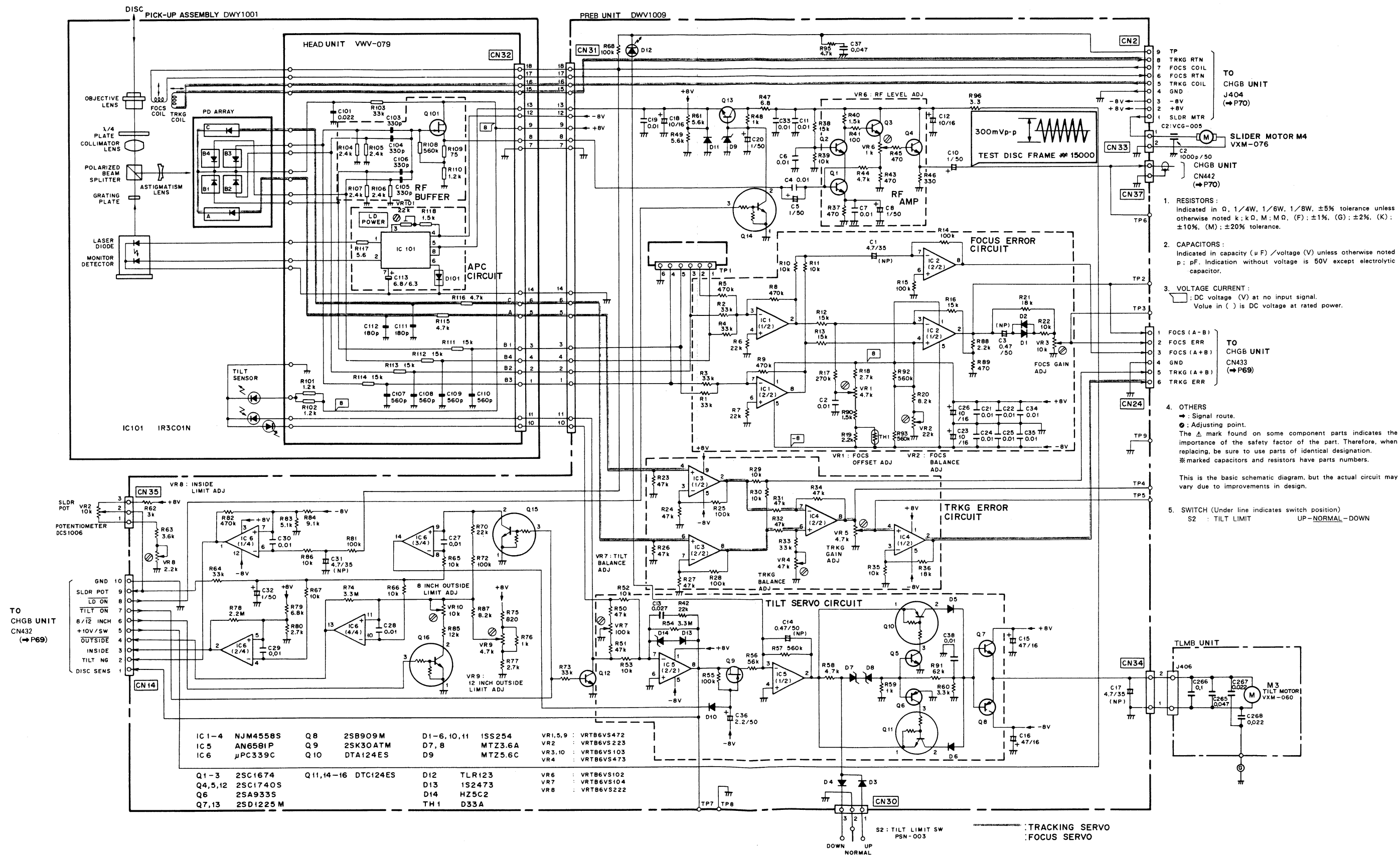
• View from soldering side



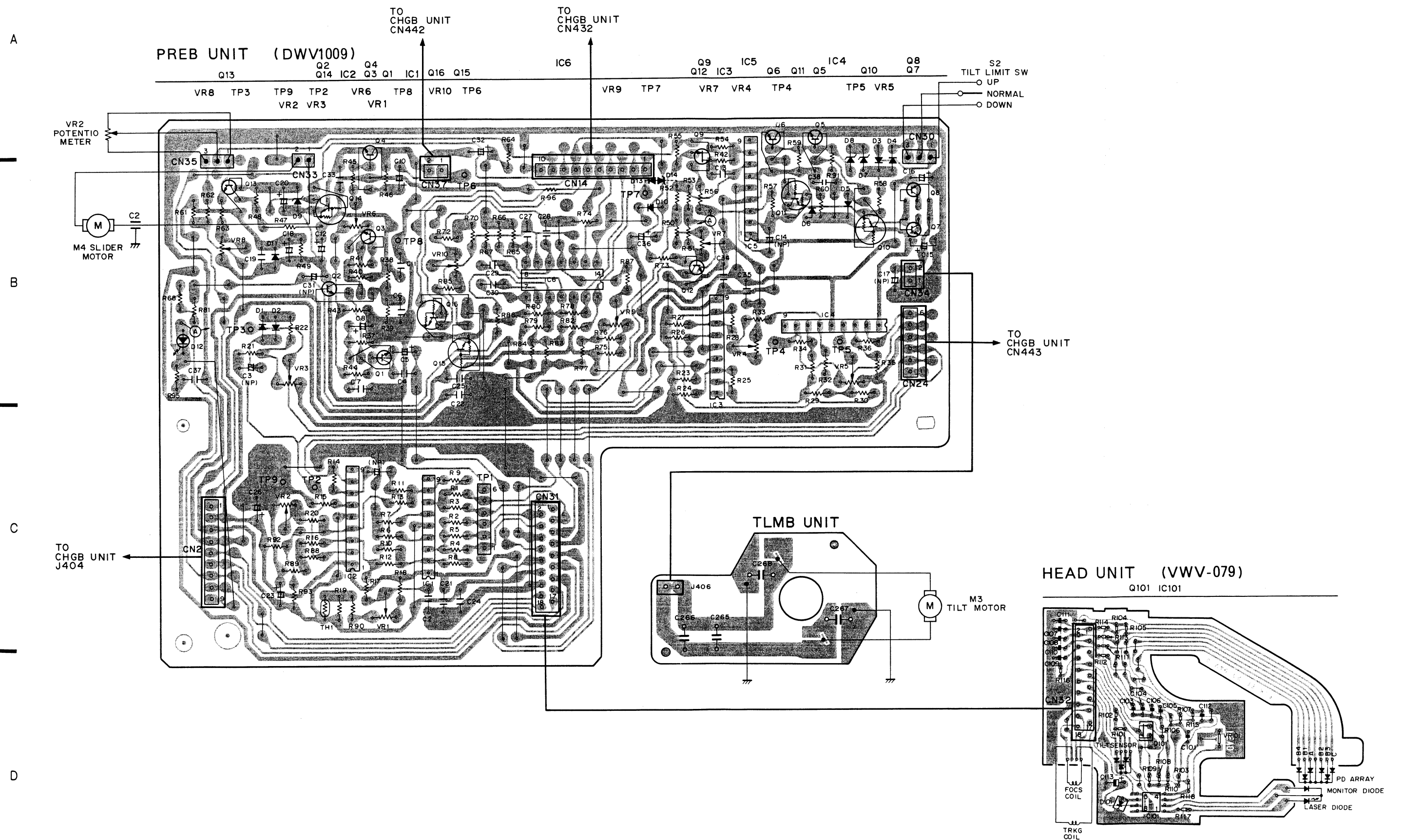


5.2.8. Mechanism B Assembly (DXX1017) Section PREB unit (DWV1009), TLMB unit, HEAD unit (VWV-079)

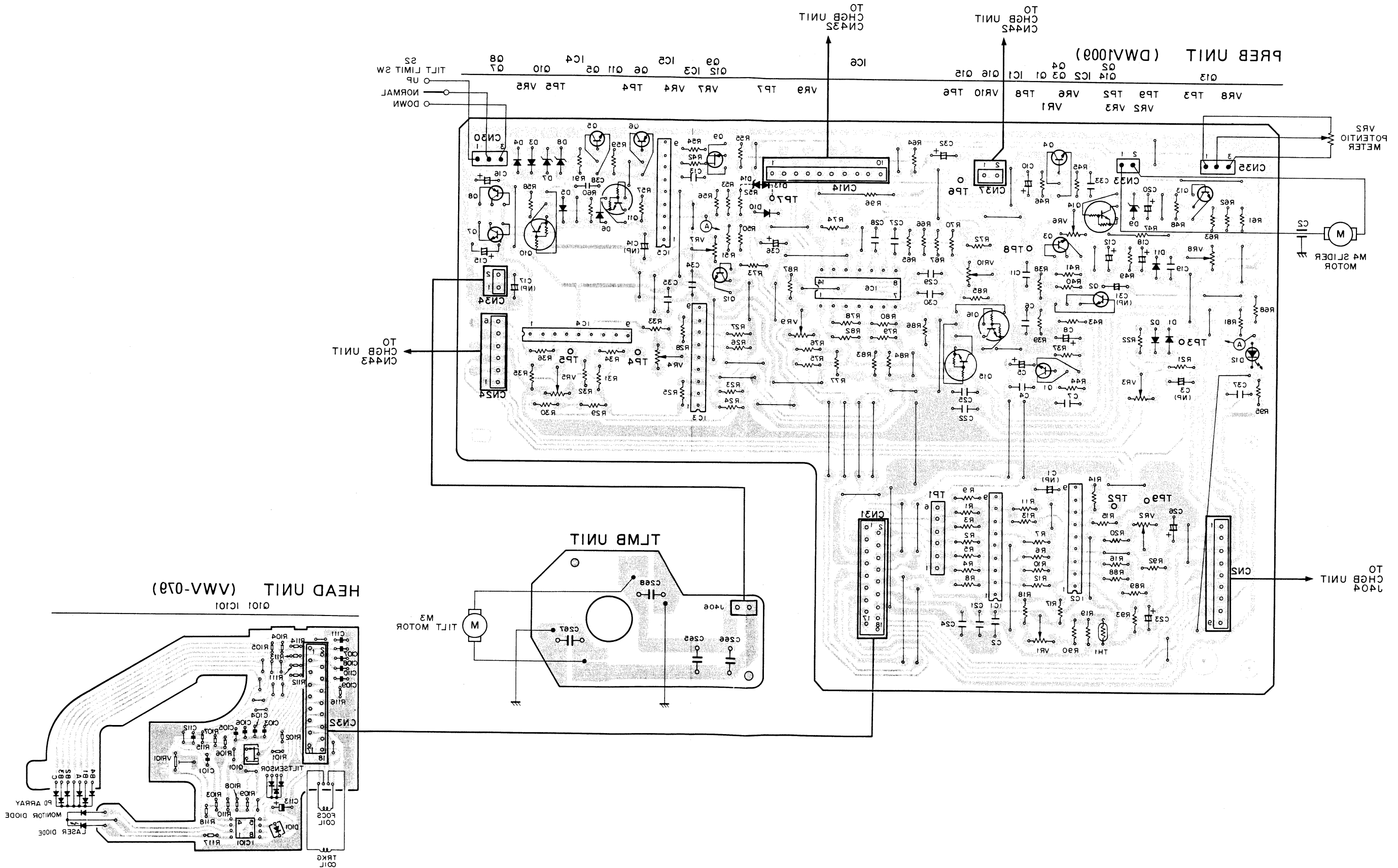
The schematic diagram of change operation system (including CIFB unit) is shown on pages 67 and 68.



Mechanism B Assembly (DXX1017) Section
• View from soldering side



Mechanism B Assembly (DXX1017) Section
• View from component side



6. ELECTRICAL PARTS LIST

NOTES :

- Parts without part number cannot be supplied.
- Parts marked by "⊙" are not always kept in stock. Their delivery time may be longer than usual or they may be unavailable.
- The Δ mark found on some component parts indicates the importance of the safety factor of the part. Therefore, when replacing, be sure to use parts of identical designation.
- When ordering resistors, first convert resistance values into code form as shown in the following examples.

Ex.1 When there are 2 effective digits (any digit apart from 0), such as 560 ohm and 47k ohm (tolerance is shown by J=5%, and K=10%).

560 Ω	56 $\times 10^1$	561	RD1/4PS	561J
47k Ω	47 $\times 10^3$	473	RD1/4PS	473J
0.5 Ω	0R5		RN2H	0R5K
1 Ω	010		RS1P	010K

Ex.2 When there are 3 effective digits (such as in high precision metal film resistors).

5.62k Ω	562 $\times 10^1$	5621	RN1/4SR	5621F
----------------	-------------------	------	---------	-------

6.1. Miscellaneous Parts

6.1.1. Units and Assemblies of Main Body

(Assemblies)

Mark	Symbol & Description	Part No.
	LDP UNIT	Non supply

(Units of Changer Control Section)

Mark	Symbol & Description	Part No.
	MCCB unit	DWG1100
	PDOB unit	DWX1026
	KEYB unit	Non supply
	DISP unit	Non supply
	PDLB unit	Non supply
	LMUS unit	Non supply
	LMDS unit	Non supply
	DRUS unit	Non supply
	DRDS unit	Non supply
	VHLS unit	Non supply

(Units of Signal Output Section)

Mark	Symbol & Description	Part No.
	DACB unit	DWK1002
	MCIO unit	Non supply

(Units of Vertical Control Section)

Mark	Symbol & Description	Part No.
	VMDR unit	DWP1005
	ENCB unit	DWX1028

(Units of Power Supply Section)

Mark	Symbol & Description	Part No.
	SYPS unit	DWR1007
	PTRB unit	Non supply
	ACRY unit	Non supply

6.1.2. Parts Other Than Units and Assemblies of Main Unit

Mark	Symbol & Description	Part No.
Δ	T1 Power transformer	DTT1032
Δ	FU2, FU3 Fuse (3.15A)	DEK1019
Δ	FU1, FU4, FU5 Fuse (4A)	DEK1020
	Flexible cord	DDD1002
	AC Power cord	DDG1018
	M8 VD motor	DXM1003
	Hours meter	VCX-006
Δ	FU6 Fuse (5A)	DEK1021

6.1.3. Main Body Unit

6.1.3.1. Units of Changer Control Section

MCCB UNIT (DWG1100)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC8, IC9	BA336
	IC10, IC11	BA820
	IC7	CXK1005P
	IC6	M51953BL
	IC3	SN74LS241N
	IC1	PD5122
	IC2	SN74LS243N
	IC4	TC4001BP
	IC5	TC4081BP
	IC12	TC40H390P
	Q4, Q5	DTA124ES
	Q1-Q3, Q6	2SC1740S
	D1-D15	SEL2210S

SWITCHES

Mark	Symbol & Description	Part No.
	S101, S102 Tact switch	RSG-143

FILTER

Mark	Symbol & Description	Part No.
	F1 3-pin filter	VTH-005

CAPACITORS

Mark	Symbol & Description	Part No.
	C4, C5	CCCSL300J50
	C10, C11, C17	CEAS010M50
	C13, C19	CEAS100M50
	C8, C15	CEAS2R2M50
	C9, C16	CEAS220M50
	C6	CEAS331M16
	C1, C7	CEAS331M6R3
	C21	CFTA224J50
	C3	CFTXA684J50
	C23-C31	CGCYX473M25
	C2, C22	CKCYB102K50
	C14, C20	CQMA562J50
	C12, C18	CQMA683J50

RESISTORS

Mark	Symbol & Description	Part No.
	R1	RA8S222J
	R40, R114	RD½PMF□□□J
	Other resistors	RD¼PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	JA502 Stereo mini-jack	VKN-177
	CN501, CN502 Connector	5597-29APB
	X1 Ceramic oscillator (8.00MHz)	DSS1005

PDOB UNIT (DWX1026)

CAPACITOR

Mark	Symbol & Description	Part No.
	C160	CEAL470M6R3

RESISTOR

Mark	Symbol & Description	Part No.
	R160	RD¼PM100J

OTHERS

Mark	Symbol & Description	Part No.
	Remote control reception section	GP1U505

KEYB UNIT

SWITCHES

Mark	Symbol & Description	Part No.
	S15, S16 Tact switch (UP KEY, DOWN KEY)	DSG-107

CAPACITORS

Mark	Symbol & Description	Part No.
	C100-C102	CGCYX103M25

OTHERS

Mark	Symbol & Description	Part No.
	CN516 LP connector	W-P5803

DISP UNIT

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	D90-D96	SEL2210S

RESISTORS

Mark	Symbol & Description	Part No.
	All resistors	RD½PMF□□□J

OTHERS

Mark	Symbol & Description	Part No.
	CN522 LP connector	W-P5803

PDLB UNIT

SEMICONDUCTOR

Mark	Symbol & Description	Part No.
	D150	SIR-56ST3HT

LMUS UNIT

SWITCH

Mark	Symbol & Description	Part No.
	S14 Microswitch (LIMIT UP SW)	DSF-101

LMDS UNIT

SWITCH

Mark	Symbol & Description	Part No.
	S11 Microswitch (LIMIT DOWN SW)	DSF-101

DRUS UNIT**SWITCH**

Mark	Symbol & Description	Part No.
	S13 Microswitch (DOOR DOWN SW)	DSF-101

DRDS UNIT**SWITCH**

Mark	Symbol & Description	Part No.
	S10 Microswitch (DOOR UP SW)	DSF-101

VHLS UNIT**SWITCH**

Mark	Symbol & Description	Part No.
	S12 Microswitch (VH BASE LOCK SW)	DSF-101

6.1.3.2. Units of Signal Output Section**DACB UNIT (DWK1002)****SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	IC7	CX20152
	IC1	CX23035
	IC2	HM6116FP-2
	IC8, IC9	NJM072DE
	IC5, IC6	NJM082D
	IC3	PDE014
	IC4	TC40H004P
	IC10	TC4053BP
	Q11	DTA124ES
	Q5, Q10	DTC124ES
	Q6	2SA1399
	Q9	2SA933S
	Q1-Q4, Q12, Q13	2SC1740S
	Q7, Q8 FET	2SK152
	D3	HZ3B3
	D1	KV1226Y
	D6, D7	MTZ5.1C
	D5	MTZ5.6C
	D4	MTZ8.2C
	D11	SEL2210S
	D8-D10	1SS254
	D2	1S2339

RELAY

Mark	Symbol & Description	Part No.
	RY1 Relay	VSR-005

COILS · FILTERS

Mark	Symbol & Description	Part No.
	F1, F2 Low-pass filter 20kHz	VTF1001
	VL1 Coil	VTL-275
	L1 Coil (24 μ H)	VTL1001
	L2 Coil (1 μ H)	LRA010K

CAPACITORS

Mark	Symbol & Description	Part No.
	C24	CCCCH910J50
	C37	CCCSL180J50
	C34, C35	CCCSL220J50
	C30, C31	CCCSL221J50
	C13	CCCUJ221J50
	C12, C14	CCCUJ330J50
	C3-C5, C9, C16, C17, C22	CEAS010M50
	C2, C23, C62	CEAS100M50
	C27, C32, C33, C41, C61	CEAS101M10
	C38, C39, C43, C44, C51, C52, C63, C64	CEAS101M25
	C65, C66	CEAS221M10
	C59, C60	CEYANP100M50
	C15, C19, C45, C46, C48, C49, C55-C58	CFTA104J50
	C18, C21	CFTA224J50
	C20	CFTA473J50
	C42	CFTA474J50
	C1, C7, C8, C25, C26, C28, C29, C40, C67-C69	CKCYF223Z50
	C36	CQMA102J50
	C6	CQMA103J50
	C10, C11	CQMA222J50
	C47, C50	CQSF102J125
	C53, C54	CQSF151J125

RESISTORS

Mark	Symbol & Description	Part No.
	VR1 Semi-fixed (22k Ω)	VRTB6VS223
	R88 (6.8M Ω)	VCN1004
	R59, R71, R72, R77, R78	RDR $\frac{1}{4}$ PM□□□J
	R27-R30, R34, R35	RN $\frac{1}{4}$ PQ□□□□J
	Other resistors	RD $\frac{1}{4}$ PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	X2 Ceramic resonator	KBR-800H
	X3 Crystal resonator	PSS-008
	X1 Crystal (8.4672MHz)	VSS-040

MCIO UNIT

CAPACITORS

Mark	Symbol & Description	Part No.
	C60	CGCYX473M25
	C61 (1000PF×8)	DCG-105

OTHERS

Mark	Symbol & Description	Part No.
	Pin jack 3P	DKB1003
	D sub connector 25P	DKP-176

6.1.3.3. Units of Vertical Control Section

VMDR UNIT (DWP1005)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC10-IC14, IC16	BA4558DX
	IC15	NJM311D
	IC3	SN74LS122N
	IC5, IC7	TC4001BP
	IC2	TC4013BAP
	IC8	TC4025BP
	IC4, IC6	TC4050BP
	IC1	TC4077BP
	IC9	TC4584BP
	IC17	UPC319C
	Q14	2SA933S
	Q20	2SB941
	Q1-Q13, Q21	2SC1740S
	Q19	2SD1266
	Q15-Q18	2SD1271
	Q22	2SJ103
	D20, D21	MTZ12C
	D19	MTZ4.7B
	D1-D14, D22-D25	1SS254
	D15-D18	30DF2-FE

RELAY

Mark	Symbol & Description	Part No.
	RY1	DSR-102

FILTERS

Mark	Symbol & Description	Part No.
	F1, F2 3-pin filter	VTH-005

CAPACITORS

Mark	Symbol & Description	Part No.
	C1	CCCSL151J50
	C7	CEANPR47M50
	C6, C11	CEANP010M50
	C43, C44	CEAS101M50
	C25, C26	CEAS102M16
	C27, C28, C33, C36	CEAS331M16
	C24	CKCYB102K50
	C5, C20-C23	CKCYF103Z50
	C29-C32, C34, C35, C37-C42	CKCYF473Z50
	C45, C46	CQMA104J50
	C12-C15	CQMA152J50
	C8, C9	CQMA223J50
	C10	CQMA272J50
	C4	CQMA393J50
	C2	CQMA682J50
	C3	CQMA823J50

RESISTORS

Mark	Symbol & Description	Part No.
	VR1 Semi-fixed resistor (10K)	VRTB6VS103
	R82-R85, R108, R109	RD½PMF100J
	R95-R97	RS2LFR68J
	R32-R35, R87, R88, R98-R101	RD½PM□□□J
	R17-R24, R53-R55, R107	RN¼PQ□□□□F
	Other resistors	RD¼PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	CN536 Connector for power supply	SD-5277-02A

ENCB UNIT (DWX1028)

SEMICONDUCTOR

Mark	Symbol & Description	Part No.
	D250	GP1A13R

CAPACITOR

Mark	Symbol & Description	Part No.
	C250	CGCYX473M25

RESISTOR

Mark	Symbol & Description	Part No.
	R250	RD¼PM221J

6.1.3.4. Units of Power Supply Section

SYPS UNIT (DWR1007)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC201	NJM78M05A
	IC202	NJM79M05A
	D202-D209	SM1.5-02LFB
	D201, D210	S10VB10-4003
	D211, D212	1SR35-100A

FILTERS

Mark	Symbol & Description	Part No.
	F201-F204 3-pin filter	VTH-005

CAPACITORS

Mark	Symbol & Description	Part No.
	C213-C216	CEAS2R2M50
	C205	CEAS332M16
	C208, C209	CEAS332M25
	C206, C207	CEAS472M16
	C201-C204	CKCYF473Z50
	C210-C212 (6800 μ F/35V)	DCH1003

RESISTORS

Mark	Symbol & Description	Part No.
	R206, R207	RS1LF391J
	R208-R212	RS2LF□□□J
	Other resistors	RD $\frac{1}{4}$ PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	CN531 Connector for power supply	SD-5277-02A

PTRB UNIT

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	Q202	2SB942
	Q201	2SD1267

ACRY UNIT

SEMICONDUCTOR

Mark	Symbol & Description	Part No.
	D50	1SR35-100A

RELAY

Mark	Symbol & Description	Part No.
△	RY50 Relay	DSR-101

FILTER

Mark	Symbol & Description	Part No.
△	F50 Line filter	DTF1012

CAPACITORS

Mark	Symbol & Description	Part No.
△	C50-C52 (0.01 μ F/AC250V)	RCG-009

OTHERS

Mark	Symbol & Description	Part No.
	CN550 Connector for power supply	SD-5277-02A

6.2. LDP Assembly

6.2.1. Units and Assemblies of LDP Assembly

(Units of Changer Control Section inside LDP Assembly)

Mark	Symbol & Description	Part No.
	VCMD unit	DWP1006
	VSNB unit	DWP1003
	LDPS unit	DWR1008
	HIFB unit	DWX1021
	HRSB unit	DWP1004
	PHSB unit	Non supply
	LEDB unit	Non supply

(Units of A/B Sides Selection Control Section)

Mark	Symbol & Description	Part No.
	CHGB unit	DWS1016

(Units of Servo Section)

Mark	Symbol & Description	Part No.
⊙	SRVB unit	DWS1068

(Units of Demodulator Section)

Mark	Symbol & Description	Part No.
⊙	DEMB unit	DWV1038

(Units of Spindle Motor Control Section)

Mark	Symbol & Description	Part No.
	SPDV unit	DWP1009

(Units of Illumination Section)

Mark	Symbol & Description	Part No.
	DSPL unit	Non supply
	DSPR unit	Non supply
	CCFL unit	Non supply
	ILDC unit	Non supply
	INVB unit	Non supply

(Assemblies of LDP Assembly)

Mark	Symbol & Description	Part No.
	Mechanism A assembly	DXX1016
	Mechanism B assembly	DXX1017

6.2.2. Parts Other Than Units and Assemblies of LDP Assembly

Mark	Symbol & Description	Part No.
S3-S7	Microswitch (CLAMP, DOWN UP, TRLKS, H. TRAY END H-LDP END)	DSF1001
C9-C11		CKDYF473Z50
M6	HD motor	DXM1004
M7	CL motor assembly	DXX1013
PM1	Plunger Fluorescent lamp	VXP-009 DEL1002

6.2.3. Units of LDP Assembly

6.2.3.1. Units of Changer Control Section

VCMD UNIT (DWP1006)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
IC202-IC204		BA6219B-V1
IC201		TC4069UBP
Q201, Q202		DTA124ES
Q203-Q206		DTC124ES
D203		MTZ13B
D204, D205		SEL2210S
D201, D202		1SS254

CAPACITORS

Mark	Symbol & Description	Part No.
C216, C217		CEAL101M6R3
C209		CEJA330M25
C201-C203, C205, C208, C210,		CGCYX473M25
C214, C215, C218, C219		
C204, C206, C207, C211-C213		CKCYF103Z50

RESISTORS

Mark	Symbol & Description	Part No.
R201-R223		RD $\frac{1}{4}$ PMF3R3J
Other resistors		RD $\frac{1}{4}$ PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	CN404, CN405 LP connector	W-P5803
	CN413 LP connector	W-P5805
	CN409, CN410 LP connector	W-P5806
	CN408, CN411 LP connector	W-P5807
	CN403 LP connector	W-P5809
	CN414 LP connector	W-P5811
	CN401, CN402 Connector	5597-29APB

VSNB UNIT (DWP1003)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	D130-D134	GP1A14

CAPACITORS

Mark	Symbol & Description	Part No.
	C130	CEAL470M6R3
	C131	CGCYX103M25

RESISTORS

Mark	Symbol & Description	Part No.
	R130-R134	RD $\frac{1}{4}$ PM221J

OTHERS

Mark	Symbol & Description	Part No.
	CN427 LP connector	W-P5807

LDPS UNIT (DWR1008)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	Q303	2SB941
	Q301, Q302	2SD1266
	D302, D303	MTZ10A
	D301	MTZ11B

CAPACITORS

Mark	Symbol & Description	Part No.
	C303, C306, C309	CEAS331M16
	C301, C302, C305, C308, C311	CEAS470M25
	C304, C307, C310	CGCYX473M25

RESISTORS

Mark	Symbol & Description	Part No.
	All resistors	RD $\frac{1}{4}$ PM□□□J

HIFB UNIT (DWX1021)**SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	Q80	2SD1277
	D80	1SR35-100A

CAPACITORS

Mark	Symbol & Description	Part No.
	C80	CEAS101M50
	C81	CGCYX473M25

RESISTOR

Mark	Symbol & Description	Part No.
	R80	RD $\frac{1}{4}$ PM103J

HRSB UNIT (DWP1004)**SEMICONDUCTOR**

Mark	Symbol & Description	Part No.
	D140	GP1A14

CAPACITOR

Mark	Symbol & Description	Part No.
	C140	CGCYX473M25

RESISTOR

Mark	Symbol & Description	Part No.
	R140	RD $\frac{1}{4}$ PM221J

PHSB UNIT**SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	Q120, Q121	PT361

OTHERS

Mark	Symbol & Description	Part No.
	CN447 LP connector	W-P5803

LEDB UNIT**SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	D110, D111	GL360

RESISTOR

Mark	Symbol & Description	Part No.
	R110	RD $\frac{1}{4}$ PMF271J

6.2.3.2. Units of A/B Sides Selection Control Section**CHGB UNIT (DWS1016)****SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
	IC12	M5218P
	IC13, IC14	NJM4556DE
	IC9	TC4011BP
	IC1-IC7, IC10, IC11, IC15	TC4066BP
	IC8	IR2339
	Q19, Q20	DTA124ES
	Q21-Q24	DTC124ES
	Q8, Q10, Q16, Q18	2SA1283
	Q12, Q14	2SA886
	Q4	2SA933S
	Q11, Q13	2SA1847
	Q2, Q3, Q7, Q9, Q15, Q17	2SC3243
	Q1, Q31	2SJ103
	Q5, Q6	2SK184
	D3-D6	HZ3B3
	D7	SEL2201S
	D1, D2	1SS254

CAPACITORS

Mark	Symbol & Description	Part No.
	C4, C8	CCCSL330J50
	C33	CEANP100M16
	C3, C7	CEANP4R7M35
	C1, C5, C21	CEAS010M50
	C32	CEAS100M50
	C26	CEAS101M50
	C27, C28	CEAS222M25
	C18	CEAS4R7M50
	C17, C19, C20	CEAS470M25
	C11, C12	CKCYB331K50
	C34	CKCYB332K50
	C13, C14	CKCYF103Z50
	C9, C10, C15, C16, C22-C25, C29-C31, C35-C37	CKCYF473Z50
	C2, C6	CQMA102J50

RESISTORS

Mark	Symbol & Description	Part No.
	R55, R64	RS1LF4R7J
	R15, R30, R36, R44, R52-R54, R61-R63	RD $\frac{1}{4}$ PMF□□□J
	Other resistors	RD $\frac{1}{4}$ PM□□□J

6.2.3.3. Units of Servo Section

⊙ SRVB UNIT (DWS1068)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	TH303	D33A
	IC302, IC303, IC403, IC404	NJM4558S
	IC401	PA0009
	IC5	PA0017
	IC6	PA0018
	IC402	PA5009
	IC501	PA9003
	IC203	PD0010
	IC204	PD0011A
	IC201	PD3083A
	IC202	PD5029
	IC10	PM2001
	IC301	PM4001
	IC4	TL8707P
	IC11	UPC4558C
	Q203-Q205, Q301	DTA124ES
	Q33, Q35, Q207, Q209, Q307, Q308, Q402, Q405	DTC124ES
	Q17, Q18, Q34, Q406, Q502, Q617	2SA933S
	Q621	2SC1627
	Q15, Q16, Q19, Q29, Q30, Q303-Q306, Q309, Q401, Q501, Q503-Q505, Q615, Q616	2SC1740S
	Q618-Q620, Q622	
	Q302, Q403, Q404	2SK184
	D604	HZ9A2
	D603	MTZ10B
	D301	MTZ7.5B
	D501	SVC321SP
	D14, D15, D17, D18, D20, D24, D25, D201-D205, D302-D306, D401-D410	1SS254

COILS • FILTERS

Mark	Symbol & Description	Part No.
	L7	LAU101J
	L401	LAU121J
	L614, L616, L617	LAU220J
	L201, L202	LAU221J
	L402	LAU270J
	L9	LAU390J
	L8	LAU4R7K
	L501	LAU6R8K
	L615	LAU680J
	F3-F5, F100, F101, F201, F202	VTH1001

CAPACITORS

Mark	Symbol & Description	Part No.
	TC201 (60p)	RCM1001
	VC1 (20p)	VCM-008
	C70	CCCCH080D50
	C77, C209, C211	CCCCH100D50
	C610	CCCCH120J50

Mark	Symbol & Description	Part No.
	C73	CCCCH220J50
	C74	CCCCH270J50
	C603, C678	CCCCH330J50
	C174, C175, C608	CCCCH390J50
	C401	CCCCH470J50
	C71, C72, C86, C416	CCCCH680J50
	C406, C413, C415	CCCSL101J50
	C173, C206, C207	CCCSL151J50
	C81	CCCSL221J50
	C402	CCCSL241J50
	C66	CCCSL271J50
	C203, C204	CCCSL300J50
	C407, C408, C506, C677	CCCSL331J50
	C210	CCCSL470J50
	C609	CCCSL750J50
	C317, C319	CEANP010M50
	C426	CEANP100M16
	C318, C433	CEANP2R2M50
	C84	CEANP330M25
	C65, C160, C309	CEANP4R7M25
	C87, C611	CEANP470M16
	C205, C429, C435, C436, C620, C621	CEAS221M10
	C90, C120, C121, C127, C208, C437, C438, C441, C442	CEAS470M25
	C307, C403, C507	CEJANPR47M50
	C335	CEJANP3R3M50
	C681, C682	CEJAR47M50
	C68, C690, C693	CEJA010M50
	C80, C428, C600	CEJA100M16
	C69, C314, C316, C509, C601, C604, C606, C616, C630, C631, C684, C686, C692, C695, C697, C698	CEJA220M16
	C150	CEJA3R3M50
	C688, C689, C694	CEJA4R7M35
	C443, C444, C501, C502, C505, C541, C542	CEJA470M16
	C311, C432, C508	CFTXA104J50
	C67	CFTXA124J50
	C434	CFTXA563J50
	C310	CFTXA683J50
	C411	CFTXA823J50
	C201, C333, C334, C602	CGCYX473M25
	C312	CKCYB102K50
	C409, C410, C417	CKCYB681K50
	C75, C76, C78, C88, C133, C301, C302, C337, C431, C439, C440, C504, C605, C607, C615, C617, C683, C685, C687, C691, C699, C699	CKCYF103Z50
	C89, C212, C612, C613	CKCYF223Z50
	C308, C414, C503	CQMA102J50
	C427	CQMA103J50
	C418, C420, C423, C425	CQMA122J50
	C83, C85	CQMA123J50
	C320, C404, C405	CQMA153J50
	C82	CQMA183J50
	C163, C412, C424	CQMA222J50
	C79, C322	CQMA223J50

Mark	Symbol & Description	Part No.
C305		CQMA392J50
C430		CQMA393J50
C304		CQMA473J50
C306, C419, C422		CQMA682J50
C303, C321		CQMA822J50
C421		CQPA122J100

RESISTORS

Mark	Symbol & Description	Part No.
VR1	Semi-fixed (1k Ω)	VRTB6VS102
VR404	Semi-fixed (22k Ω)	VRTB6VS223
VR3, VR10	Semi-fixed (4.7k Ω)	VRTB6VS472
VR402, VR403, VR405		
	Semi-fixed (47k Ω)	VRTB6VS473
VR501	Semi-fixed (1k Ω)	VRTG6VS102
VR401	Semi-fixed (4.7k Ω)	VRTG6VS472
R252, R253	Resistor array	RA4S103J
R242	Resistor array	RA8S103J
R951, R952		RD $\frac{1}{4}$ PM103J
R103, R104		RN $\frac{1}{4}$ PQ□□□□F
Other resistors		RD $\frac{1}{4}$ PM□□□□J

OTHERS

Mark	Symbol & Description	Part No.
X201	Ceramic resonator (4.00MHz)	VSS-018
X202	Ceramic resonator (400kHz)	VSS-041
X1	Crystal resonator	VSS1005

6.2.3.4. Units of Demodulator Section**⊙ DEMB UNIT (DWV1038)****SEMICONDUCTORS**

Mark	Symbol & Description	Part No.
IC204		DYY1001
IC2		NJM4558DX
IC201		PA0023
IC202		PA3018
IC1		PA0034
IC203		PM0001
Q1, Q213		DTC124ES
Q203		2SA933S
Q201		2SC1674
Q202, Q204-Q212, Q216, Q401-Q404		2SC1740S
D201-D203		1SS254

COILS • FILTERS

Mark	Symbol & Description	Part No.
L302, L303	Axial inductor	LAU100J
L211	Axial inductor	LAU101J
L202-L205	Axial inductor	LAU180J
L201	Axial inductor	LAU270J
L206	Axial inductor	LAU390J

Mark	Symbol & Description	Part No.
L207	Axial inductor	LAU430J
L213, L214	Axial inductor	LAU470J
L208	Radial inductor	LRA220K
L212	Radial inductor	LRA221K
L209, L210	Radial inductor	LRA391K
F1	(2.3MHz) B.P.F	VTF1002
F2	(2.8MHz) B.P.F	VTF1003
F401	Low-pass filter	VTF-060

CAPACITORS

Mark	Symbol & Description	Part No.
C207, C209, C221, C222, C234, C265		CCCCH080D50
C224, C235		CCCCH150J50
C225, C257, C263		CCCCH180J50
C208, C256, C262, C266		CCCCH220J50
C238		CCCCH221J50
C223		CCCCH330J50
C237		CCCCH390J50
C8, C29, C205, C206, C264		CCCCH560J50
C219		CCCCH680J50
C258		CCCSL121J50
C202		CCCSL151J50
C210, C242-C244		CCCSL181J50
C260, C261		CCCSL241J50
C28, C211		CCCSL271J50
C6		CCCSL301J50
C227		CCCSL330J50
C37		CEANLR47K50
C19, C20, C38, C39, C302, C307		CEANP100M16
C9, C13, C31, C34		CEANP220M10
C226, C259		CEANP4R7M25
C17, C401, C404		CEAS100M50
C5, C27, C303, C306, C308, C311		CEAS101M10
C231		CEAS220M50
C2, C4, C15, C24, C26		CEAS221M6R3
C245, C403, C406		CEAS3R3M50
C36		CEAS4R7M50
C23, C214, C215, C220, C241, C252, C300, C304, C305		CEAS470M25
C301, C309, C312		CEAS471M10
C255		CEJANP3R3M25
C230		CEJA100M16
C228, C250		CEJA470M16
C16, C18		CFTXA104J50
C232, C233		CKCYB102K50
C14, C22, C40, C41, C201, C203, C212, C213, C216-C218, C229, C236, C239, C240, C249, C251, C254, C267-C270, C310, C313-C315, C405		CKCYF103Z50
C1, C3, C21, C25, C248		CKCYF223Z50
C7, C30		CQMA152J50
C12, C35		CQMA393J50
C10, C11, C32, C33		CQMA472J50
C402		CQSA821J50

RESISTORS

Mark	Symbol & Description	Part No.
	VR201, VR202 Semi-fixed (1k Ω)	VRTB6VS102
	R304	DCN1002
	Other resistors	RD $\frac{1}{4}$ PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	DL201 Delay line (220nsec)	VTF-061

6.2.3.5. Units of Spindle Motor Control Section

SPDV UNIT (DWP1009)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC3	M5218P
	IC1, IC2	TC4066BP
	Q11	STA302A
	Q10	STA303A
	Q7-Q9	2SA1015
	Q12	2SA933S
	Q14	2SC1627
	Q1-Q6, Q13	2SC1740S
	Q15	2SD1267
	D1	S2K20

COIL

Mark	Symbol & Description	Part No.
	L1 Choke coil	VTT-070

CAPACITORS

Mark	Symbol & Description	Part No.
	C7	CEAS100M50
	C1-C3, C6	CEAS101M50
	C4	CKCYB102K50
	C5	CKCYB471K50
	C8, C9	CKCYF223Z50

RESISTORS

Mark	Symbol & Description	Part No.
	R20-R23	RN $\frac{1}{4}$ PQ2202F
	R31	RS1LMF2R7J
	R19 (1.2 Ω /3W)	VCN-092
	Other resistors	RD $\frac{1}{4}$ PM□□□J

6.2.3.6 Units of Illumination Section

DSPL UNIT

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	D30, D31	LT-9010D

RESISTORS

Mark	Symbol & Description	Part No.
	R30-R32	RD $\frac{1}{4}$ PM151J

DSPR UNIT

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	D40, D41	LT-9010D

RESISTORS

Mark	Symbol & Description	Part No.
	R40-R42	RD $\frac{1}{4}$ PM151J

CCFL UNIT

There is no supplied parts in this unit.

ILDC UNIT

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	Q10	2SA886
	D10	MTZ13B

COIL

Mark	Symbol & Description	Part No.
	L10	LRA270K

CAPACITORS

Mark	Symbol & Description	Part No.
	C10, C11	CEAS221M25
	C12	CKCYF103Z50

RESISTORS

Mark	Symbol & Description	Part No.
	R10	RD $\frac{1}{4}$ PM331J

INVB UNIT

COILS

Mark	Symbol & Description	Part No.
	L20, L21 Ladi al inductor	LRA270K

CAPACITORS

Mark	Symbol & Description	Part No.
	C22	CEAS221M25
	C20, C21	CKCYF103Z50

OTHERS

Mark	Symbol & Description	Part No.
	Inverter	DWR1020

6.3. Mechanism A Assembly (DXX1016)

6.3.1. Units and Assemblies of Mechanism A Assembly

Mark	Symbol & Description	Part No.
	Pick-up assembly	VWY1005
	PREB unit	DWV1009
	TLMA unit	Non supply
	BLMB unit	Non supply
	(Units of spindle motor (DXM1006))	

6.3.2. Parts Other Than Units and Assemblies of Mechanism A Assembly

Mark	Symbol & Description	Part No.
	M1 Spindle motor	DXM1006
	S1, S2 Leaf switch (TILT LIMIT)	PSN-003
	C1, C2 Thru type capacitor (1000PF/50V)	VCG-005
	Potentiometer	DCS1006
	M1 Tilt motor	VXM-060
	M2 Slider motor	VXM-076

6.3.3. Units of Mechanism A Assembly

PREB UNIT (DWV1009)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC5	AN6581P
	IC1-IC4	NJM4558S
	IC6	UPC339C
	Q10	DTA124ES
	Q11, Q14-Q16	DTC124ES
	Q6	2SA933S
	Q8	2SB909M
	Q1-Q3	2SC1674
	Q4, Q5, Q12	2SC1740S
	Q7, Q13	2SD1225M
	Q9	2SK30ATM
	D14	HZ5C2
	D7, D8	MTZ3.6A
	D9	MTZ5.6C
	D12	TLR123
	D1-D6, D10, D11	1SS254
	D13	1S2473
	TH1	D33A

CAPACITORS

Mark	Symbol & Description	Part No.
	C5, C8, C10, C20, C32	CEAL010M50
	C12, C18, C23, C26	CEAL100M16
	C36	CEAL2R2M50
	C15, C16	CEAL470M16
	C3, C14	CEANPR47M50

Mark	Symbol & Description	Part No.
	C1, C17, C31	CEANP4R7M35
	C37	CGDYX473M25
	C2, C4, C6, C7, C11, C19, C21, C22, C24, C25, C27-C30, C33-C35, C38	CKDYF103Z50
	C13	CQMA273J50

RESISTORS

Mark	Symbol & Description	Part No.
	VR6 Semi-fixed (1k Ω)	VRTB6VS102
	VR3, VR10 Semi-fixed (10k)	VRTB6VS103
	VR7 Semi-fixed (100k)	VRTB6VS104
	VR8 Semi-fixed (2.2k)	VRTB6VS222
	VR2 Semi-fixed (22k)	VRTB6VS223
	VR1, VR5, VR9	VRTB6VS472
	Semi-fixed (4.7k)	
	VR4 Semi-fixed (47k)	VRTB6VS473
	R96, R47	RD $\frac{1}{4}$ PM□□□J
	R79, R80	RN $\frac{1}{8}$ PQ□□□□F
	Other resistors	RD $\frac{1}{8}$ PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	CN31 Connector 18P	VKN-162

TLMA UNIT

CAPACITORS

Mark	Symbol & Description	Part No.
	C261	CKCYF473Z50
	C263, C264	CKPUYF223Z25
	C262	CQMA104J50

BLMB UNIT

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC1	PA2016
	IC2, IC3	TC4066BP
	IC4	TC4013BP
	IC5	UPC393C
	Q1	2SC1815

CAPACITORS

Mark	Symbol & Description	Part No.
	C1	CEAS4R7M25
	C2	CEANL3R3M25
	C3	CQMA104K50
	C4, C5	CKCYF103Z50

RESISTORS

Mark	Symbol & Description	Part No.
	All resistors	RD $\frac{1}{4}$ PM□□□J

OTHERS

Mark	Symbol & Description	Part No.
	HA, HB, HC, Hall device	HW-300A

6.4. Pick-up Assembly (VWY1005)

6.4.1. Units of Pick-up Assembly (VWY1005)

Mark	Symbol & Description	Part No.
	HEAD unit	VWV-079

6.4.2. Parts Other Than Pick-up Assemblies (VWY1005) Unit

Mark	Symbol & Description	Part No.
	Card	VDA-108
	Sensor assembly	VEX1001
	Magnetic circuit assembly	VGX-071

6.4.3. Units of Pick-up Assembly (VWY1005)

HEAD UNIT (VWV-079)

SEMICONDUCTOR

Mark	Symbol & Description	Part No.
	IC101	IR3C01N

CAPACITORS

Mark	Symbol & Description	Part No.
	C111, C112	CCSQCH181J50
	C103-C106	CCSQCH331J50
	C107-C110	CCSQSL561J50
	C101	CKSQYF223Z50
	C113 (6.8 μ F/6.3V)	VCH-025

RESISTORS

Mark	Symbol & Description	Part No.
	VR101 Semi-fixed (22k Ω)	VCP-141
	R117	RS $\frac{1}{2}$ S5R6K
	Other resistors	RS $\frac{1}{2}$ S $\square\square\square$ J

OTHERS

Mark	Symbol & Description	Part No.
	Connector 18P	VKN-162

6.5. Mechanism B Assembly (DXX1017)

6.5.1. Units and Assemblies of Mechanism B Assembly

Mark	Symbol & Description	Part No.
	Pick-up assembly	DWY1001
	PREB unit	DWV1009
	TLMB unit	Non supply
	CIFB unit	Non supply

6.5.2. Parts Other Than Units and Assemblies of Mechanism B Assembly

Mark	Symbol & Description	Part No.
	S8, S9 Micro switch (CHG A, B)	DSF1002
	S1, S2 Leaf switch (TILT LIMIT)	PSN-003
	C1, C2 Thru type capacitor (1000PF/50V)	VCG-005
	Potentiometer	DCS1006
	M5 CH motor Assembly	DXX1014
	M3 Tilt motor	VXM-060
	M4 Slider motor	VXM-076

6.5.3. Units of Mechanism B Assembly

PREB UNIT (DWV1009)

SEMICONDUCTORS

Mark	Symbol & Description	Part No.
	IC5	AN6581P
	IC1-IC4	NJM4558S
	IC6	UPC339C
	Q10	DTA124ES
	Q11, Q14-Q16	DTC124ES
	Q6	2SA933S
	Q8	2SB909M
	Q1-Q3	2SC1674
	Q4, Q5, Q12	2SC1740S
	Q7, Q13	2SD1225M
	Q9	2SK30ATM
	D14	HZ5C2
	D7, D8	MTZ3.6A
	D9	MTZ5.6C
	D12	TLR123
	D1-D6, D10, D11	1SS254
	D13	1S2473
	TH1	D33A

CAPACITORS

Mark	Symbol & Description	Part No.
	C5, C8, C10, C20, C32	CEAL010M50
	C12, C18, C23, C26	CEAL100M16
	C36	CEAL2R2M50
	C15, C16	CEAL470M16
	C3, C14	CEANPR47M50
	C1, C17, C31	CEANP4R7M35
	C37	CGDYX473M25
	C2, C4, C6, C7, C11, C19, C21, C22, C24, C25, C27-C30, C33-C35, C38	CKDYF103Z50
	C13	CQMA273J50

RESISTORS

Mark	Symbol & Description	Part No.
	VR6 Semi-fixed (1k Ω)	VRTB6VS102
	VR3, VR10 Semi-fixed (10k)	VRTB6VS103
	VR7 Semi-fixed (100k)	VRTB6VS104
	VR8 Semi-fixed (2.2k)	VRTB6VS222
	VR2 Semi-fixed (22k)	VRTB6VS223

Mark	Symbol & Description	Part No.
	VR1, VR5, VR9 Semi-fixed (4.7k)	VRTB6VS472
	VR4 Semi-fixed (47k)	VRTB6VS473
	R47, R96	RD $\frac{1}{4}$ PM $\square\square\square$ J
	R79, R80	RN $\frac{1}{6}$ PQ $\square\square\square$ F
	Other resistors	RD $\frac{1}{6}$ PM $\square\square\square$ J

OTHERS

Mark	Symbol & Description	Part No.
	CN31 Connector 18P	VKN-162

TLMB UNIT**CAPACITORS**

Mark	Symbol & Description	Part No.
	C265	CKCYF473Z50
	C267, C268	CKPUYF223Z25
	C266	CQMA104J50

CIFB UNIT**COILS**

Mark	Symbol & Description	Part No.
	L71, L72 Coil (1 μ H)	LRA010K

CAPACITORS

Mark	Symbol & Description	Part No.
	C71, C72	CGCYX473M25

6.6. Pick-up Assembly (DWY1001)**6.6.1. Units of Pick-up Assembly (DWY1001)**

Mark	Symbol & Description	Part No.
	HEAD unit	VWV-079

6.6.2. Parts Other Than Pick-up Assemblies (DWY1001) Unit

Mark	Symbol & Description	Part No.
	Card	VDA-108
	Sensor assembly	VEX1001
	Magnetic circuit assembly	VGX-071

6.6.3. Units of Pick-up Assembly (DWY1001)**HEAD UNIT (VWV-079)****SEMICONDUCTOR**

Mark	Symbol & Description	Part No.
	IC101	IR3C01N

CAPACITORS

Mark	Symbol & Description	Part No.
	C111, C112	CCSQCH181J50
	C103-C106	CCSQCH331J50
	C107-C110	CCSQSL561J50
	C101	CKSQYF223Z50
	C113 (6.8 μ F/6.3V)	VCH-025

RESISTORS

Mark	Symbol & Description	Part No.
	VR101 Semi-fixed (22k Ω)	VCP-141
	R117	RS $\frac{1}{6}$ S5R6K
	Other resistors	RS $\frac{1}{6}$ S $\square\square\square$ J

OTHERS

Mark	Symbol & Description	Part No.
	Connector 18P	VKN-162

7. ADJUSTMENT

7.1 LDP SECTION ADJUSTMENT

7.1.1 Precautions on Adjustment

Since the LC-V300 is controlled by the CO-V300 commander, the LDP unit cannot be operated directly (frame search, chapter search, fast-forward, etc.). Therefore, connect the wired remote control jig to operate the LDP unit. The following adjustments, however, can be performed in the service mode without using the remote control jig.

1. Inside position detection adjustment
 2. 12 inch outside position detection adjustment
 3. 8 inch outside position detection adjustment
- During the above adjustments, test discs can be replaced in the manual mode (refer to section 9 on the service mode, page 142).

(1) Turning power on

1. When using a commander : Connect the commander to the changer with the control cord, then turn power on.
2. When not using a commander : Short-circuit CN548 on the ACRY unit, then turn power on.

(2) Checking LDP unit operation

1. Set the main unit to manual mode.
 - 1.1 Short-circuit the test pins of CN514 on the MCCB board.
 - 1.2 Turn power on while pressing both the S101 and S102 switches on the MCCB board. Do not keep these switches pressed for longer than 10 seconds after power is turned on.
2. Load the disc on the LDP using the manual mode (refer to the service mode Table 9-1 in section 9).
 - 2.1 Load the disc on the tray.
 - 2.2 Set the vertical mode, then move the LDP to the address corresponding to the disc to be played.
 - 2.3 Set the horizontal mode and insert the tray into the LDP.
 - 2.4 Set the clamp mode and clamp the disc.
 - 2.5 If necessary, set the change mode and change sides (A/B).
3. Connect the wired remote control to the main unit.
Connect the wired remote control jig to the minijack JA502 on the main unit MCCB board, and operate the LDP.

(3) Inside and outside position detection adjustment in the manual mode (not using the wired remote control jig)

1. Load the test disc using the manual mode.
2. Select the inside position, 12 inch outside position and 8 inch outside position adjustment modes with S101 and S102 on the MCCB unit, then perform play, search, still and stop operations with the manual UP and DOWN keys and do the respective adjustments (refer to section 9 on the service mode, page 142).

7.1.2. Instruments Needed for Adjustment

- Dual trace oscilloscope (0 to 35MHz, X-Y mode)
- Oscilloscope
- Frequency counter
- Cable for connection and TV monitor
- Remote control jig
- Screwdriver for grating adjustment (GGV-129)
- Test disc (disc with no warping or scratches)

7.1.3. Preparations for Adjustment

- Perform the adjustments with the front panel removed and the door open.
- Remove the VH cover and VH cover (F) when performing the B side PREB assembly, SRVB assembly, and DEMB assembly adjustments.
- The setting for the screwdriver for grating adjustment is as follows.

- (Side A)
1. Remove the side panel (right side as seen from the front).
 2. Pull out several disc trays both above and below the disc tray containing the test disc.
 3. Mount the screwdriver for grating adjustment through the gap between the back plate (right) and disc trays.

- (Side B)
1. Remove the side plate (left side).
 2. Mount the screwdriver for grating adjustment with the SRVB assembly and DEMB assembly setting up.

- When performing adjustment with the TRKG servo OPEN (servo loop open, no servo operation), connect Pin ② of SRVB assembly IC301 (PM4001) to Pin ② (+5V).
If the pick-up begins to move when the TRKG servo is set to open, remove the CN19 connector of the PREB assembly.
- Oscillator output and test disc correlation table for adjustment of TRKG loop gain.

Test disc	F1	F2	F3	F4	F5	G1
Frequency (kHz)	3.0	3.7	3.3	3.3	3.3	3.3
Output (Vp-p)	4.0	4.0	4.0	4.0	4.0	4.0

Table 7-1.

- Oscillator output and test disc correlation table for adjustment of FOCS loop gain.

Test disc	F1	F2	F3	F4	F5	G1
Frequency (kHz)	2.1	1.7	1.7	2.0	1.7	1.7
Output (Vp-p)	1.2	1.2	1.2	1.2	1.2	1.2

Table 7-2.

- Frame Nos. in this section indicate the test disc F4.
- Note that the contents of test disc N1 are different from that of the test disc F series.

7.1.4. Adjustment of Mechanism System (PREB assembly) and Optical System (pick-up)

- PREB assembly is connected with HEAD board in the pick-up by the flexible connector board. Use caution when removing the PREB assembly to prevent damage to this connector board and to make sure that excessive force is not applied to the pick-up.
- Do not touch VR7 of PREB assembly as it is not necessary for adjustment.

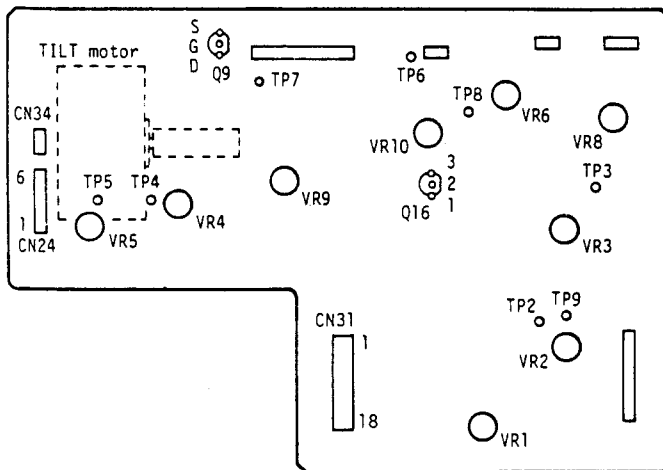


Fig. 7-1. PREB Assembly Adjustment Locations

(1.) FOCS Offset Adjustment (VR1)

- Turn ON the power switch without a disc mounted.
- Adjust VR1 so that the voltage at TP2 (FOCS error signal) is 0V.

(2.) Inside and Outside Position Detection Adjustment

(2-1.) Inside Position Detection Adjustment (VR8)

Note: If the adjustment point of VR8 is altered, it is also necessary to adjust VR9 and VR10.

- Rotate VR8 fully in the clockwise direction.

- Set the player to the play mode, and press the display selection keys of the remote control jig to display the frame number on the screen. And confirm that "P" indication is indicated in the upper right of the screen.
- Set the unit to the still mode at frame #500.
- Slowly rotate VR8 back in the counterclockwise direction and stop at the point where "P" indication changes to "L".
- Confirm that the play mode changes to the still mode when "L" indication changes to "P" and that the frame number is in the range of #500 to #1,200 at this point. And that the frame number is in the range of #500 to #1,200 at this point.

(2-2.) 12-inch Outside Position Detection Adjustment (VR9)

Note: When the adjustment point of VR9 is changed, it is necessary that VR10 also be adjusted and that the adjustment of VR8 be completed.

- Set to the still mode at frame #45,050.
- Adjust VR9 to the point where "P" indication changes to "L".
- Return until "P" is appeared using the fast-forward key and start play from the point where "P" is appeared. Confirm that the frame number is in the range of #44,332 to #45,050 when "L" is indicated again.

(2-3.) 8-inch Outside Position Detection Adjustment (VR10)

Note: Adjustment of VR8 and VR9 must be completed before this adjustment.

- Set the unit to the still mode at frame #19,220
- Connect Pins ② and ① (ground) of Q16 (DTC124ES) of the PREB assembly.
- Adjust VR9 to the point where "P" changes to "L".
- Return until "P" is appeared using the fast-forward key and start play from the point where "P" is appeared. Confirm that the frame number is in the range of #18,580 to #19,220 when "L" is indicated again.
- Remove the connection to Q16.

(3.) Rough Adjustment of Grating

- Connect Pins ⑩ and ⑪ of IC301 (PM4001) of SRVB unit. (TRKG servo is open.)
- Press the fast-forward key of remote to advance to the vicinity of frame #15,000.
- Mount the screwdriver for grating adjustment as shown in Fig. 7-2.
- Monitor the TRKG error signal at TP4 of the PREB assembly, and set the grating position using the screwdriver so that there is minimum amplitude and a smooth waveform envelope (null point). (Photo 7-1.)
From this position, slowly rotate the screwdriver, and adjust the grating to the first point where the error signal has maximum amplitude. (Photo 7-2.)

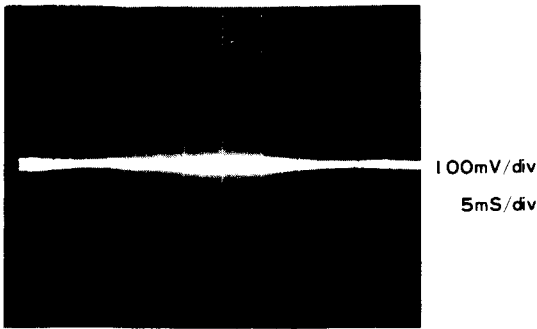


Photo 7-1. TRKG Error Waveform (loop OPEN, minimum amplitude)

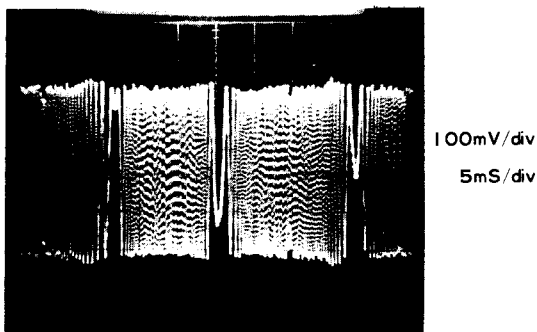


Photo 7-2. TRKG Error Waveform (loop OPEN, maximum amplitude)

(4.) TRKG Error Balance Adjustment (VR4)

- Set the TRKG servo to OPEN.
- Fast forward to the vicinity of frame #20,000, monitor TP4 (TRKG error signal), and adjust VR4 so that the center of the waveform amplitude is centered on DC 0V.
- Remove the connection making the TRKG servo OPEN.

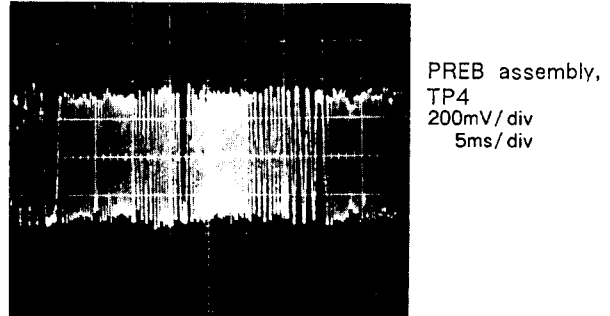


Photo 7-3. TRKG Error Waveform (loop OPEN)

(5.) SLDR Shaft Horizontality Adjustment

- Remove the connections of TLMA assembly and PREB assembly (CN34).
- Set the unit to the still mode at frame #17,000, and measure the voltage at Pin C31.
- Set to the still mode at frame #100 and confirm that the voltage at Pin C31 is within $\pm 90\text{mV}$ of the voltage measured previously. If this specification is not satisfied, manually rotate the TILT motor and adjust until satisfied.
- Leave the CN34 connection off, and connect after completing "(10.) Tilt Sensor Angle Adjustment".

(6.) TRKG Servo Loop Gain Adjustment (VR5)

- Connect an oscilloscope and oscillator to TP4 and TP5 as shown in Fig. 7-3. Set the oscilloscope to the X-Y mode.
- Search to the vicinity of frame #15,000.
- Set the oscillator output as shown in Table 7-1, on page 124.
- Adjust VR5 for a flat resurge waveform.

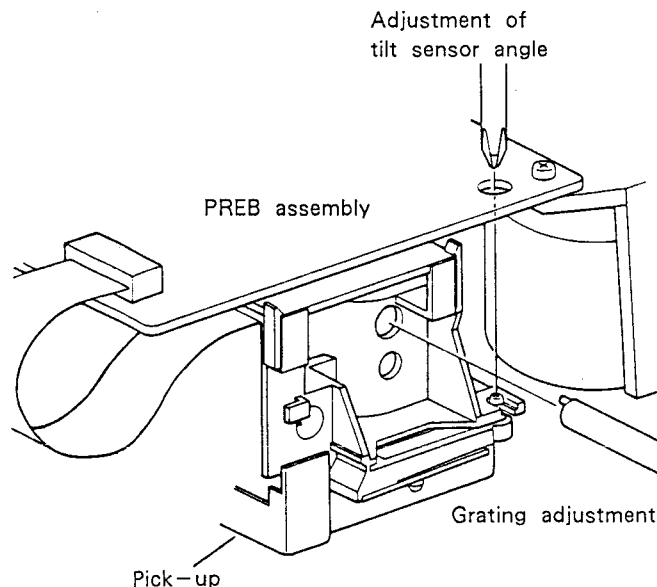


Fig. 7-2. Pick-up Adjustment Locations

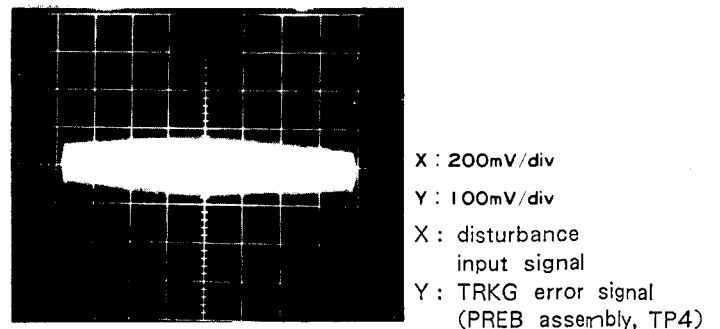


Photo 7-4. Resurge Waveform (TRKG loop gain adjustment)

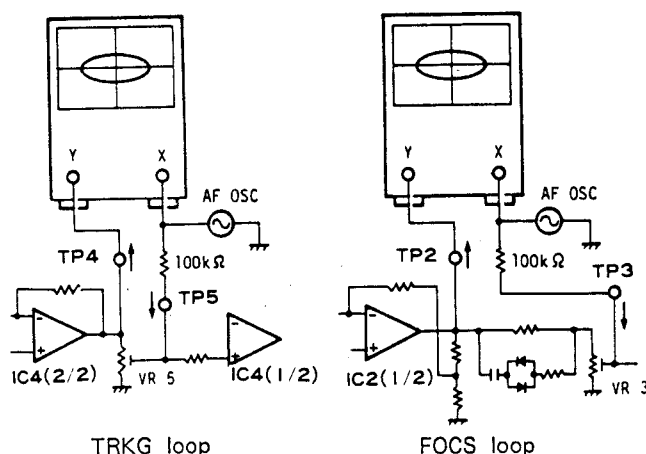
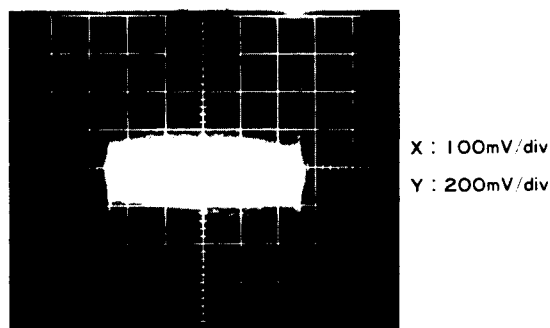


Fig. 7-3. Servo Loop Gain Adjustment

(7.) FOCS Servo Loop Gain Adjustment (VR3)

- Make the connections shown in Fig. 7-3.
- Search to the vicinity of frame #15,000.
- Set the oscillator output as shown in Table 7-2, on page 124.
- Adjust VR3 for a flat resurge waveform.



X : disturbance input signal
Y : FOCS error signal (PREB unit, TP2)

Photo 7-5. Resurge Waveform
(FOCS Servo loop gain adjustment)

(8.) RF Level Adjustment (VR6)

- Search to the vicinity of frame #15,000.
- Observe TP6 (RF signal) and adjust VR6 for an amplitude of 300mVp-p.

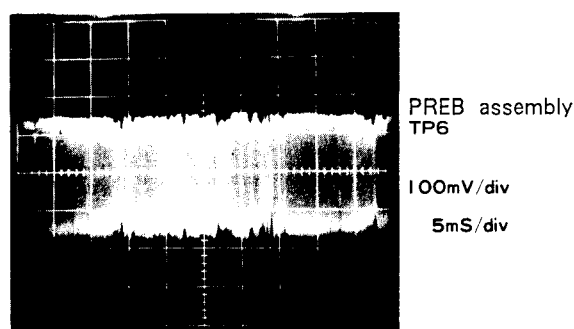


Photo 7-6. RF Signal Waveform

(9.) FOCS Error Balance Adjustment (VR2)

- Search to frame #104.
- Adjust VR2 until the stripe pattern caused by the crosstalk on the left and right of the screen can no longer be observed.

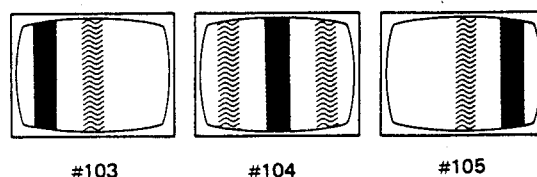


Fig. 7-4. Effects of Crosstalk

(10.) Adjustment of Tilt Sensor Angle

- Adjust the angle adjustment screw of the tilt sensor so that the voltage at TP7 is 0V at frame #104.
- Restore the original connections of the TILT motor and PREB assembly (CN34).

(11.) Grating Fine Adjustment

- Connect Pins ② and ② of IC301 (PM4001) of SRVB assembly. (TRKG servo is open.)
- Set the oscilloscope to the X-Y mode, and adjust the X and Y zero points. (Adjust the beam spot of the oscilloscope to the center of the CRT scale.)
- Connect TP4 to the X input and CN24-5 (TRKG (A+B) signal) to the Y input.
- Press the fast-forward key of the remote control unit to advance to the vicinity of frame #15,000.
- Adjust the grating until the resurge waveform is flat.
- Adjust VR4 so that center of the amplitude in the horizontal direction matches the center of the CRT.

7.1.5 LD Player Electrical System Adjustment

7.1.5.1 DEMB Assembly Adjustment

(1.) Demodulation video level adjustment

- Set to the still mode at the composite test signal section beginning from frame #19,801.
- Adjust VR201 so that the video signal at Pin ⑩ of IC202 (PA3018) is $1.3V_p-p$.

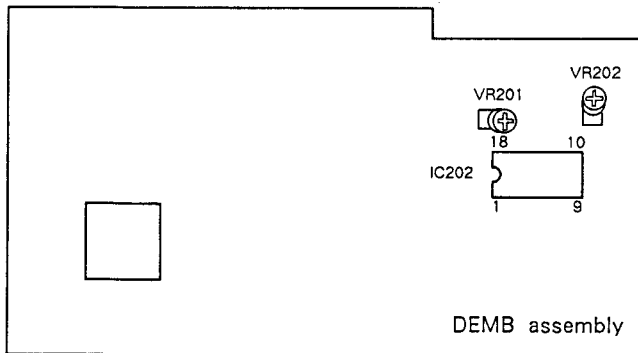


Fig. 7-5. DEMB Assembly Adjustment Points

(2.) 1H Delay Video Level Adjustment

- Adjust VR202 so that the video signal at Pin ⑩ of IC202 is $1.3V_p-p$.

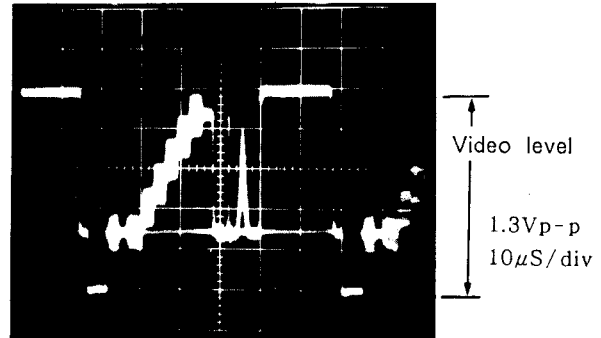


Photo 7-7. Composite Test Signal Waveform (Video output terminal)

7.1.5.2 SRVB Assembly Adjustment

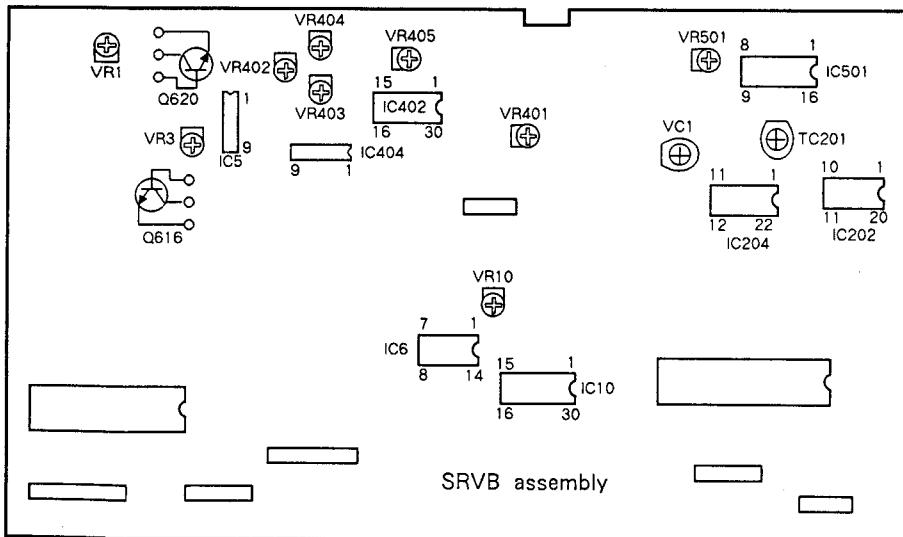


Fig. 7-6. SRVB Assembly Adjustment Points

- VC1: Primary oscillation frequency adjustment
- TC201: Clock frequency adjustment
- VR1: TBC video level adjustment
- VR3: VCO center frequency adjustment
- VR10: PLL center frequency adjustment
- VR401: CPCB error level adjustment
- VR402: TBC off-set adjustment
- VR403: Burst gate timing adjustment
- VR404: Time base error detection adjustment
- VR405: Sync gate timing adjustment
- VR501: CPCB mixing level adjustment

(1.) Primary Oscillation Frequency Adjustment

- Connect a frequency counter to Pin ⑦ of IC10 (PM2001) and adjust VC1 so that the frequency is $3.579545 \pm 5\text{Hz}$.

(2.) TBC Offset Adjustment

- Turn ON the power switch and without starting play, adjust VR402 so that the voltage at Pin ⑧ of IC404 (NJM4558S) is DC 0V.
Note: If the DC voltage cannot be confirmed due to noise, connect the L.P.F. shown in Fig. 7-7 for observation.

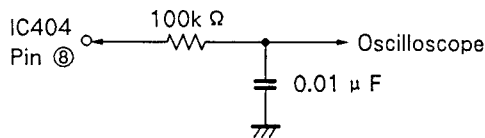


Fig. 7-7. L.P.F. for Eliminating Noise

(3.) TBC Video Level Adjustment

- Set to the still mode at the composite test signal section beginning from frame #19,801.
- Adjust VR1 so that the video signal amplitude of Q620 emitter is 2Vp-p .
- Observe the composite video signal at the video signal output terminal which is terminated with 75Ω and confirm that the video signal level is 1Vp-p .

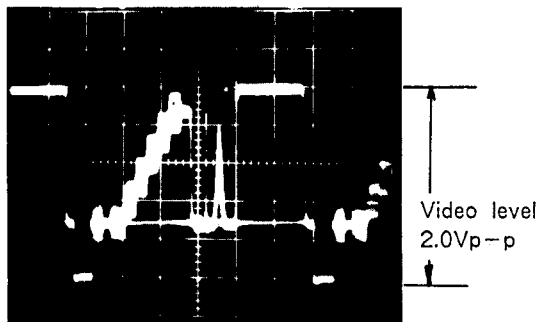


Photo 7-8. Composite Video Signal (Q620 Emitter)

(4.) VCO Center Frequency Adjustment

- Connect Pin ⑨ of IC5 (PA0017) to GND.
→ The time base error is forced to 0.
- Adjust VR3 so that the Q620 emitter video signal is delayed $70.7\mu\text{sec}$ ($1\text{H} + 7.2\mu\text{sec}$) from the Q616 emitter video signal.
→ The video signal input from Q616 is delayed by the CCD circuit and output to Q620 emitter. $70.7\mu\text{sec}$ is the delay time when the time base error is 0.

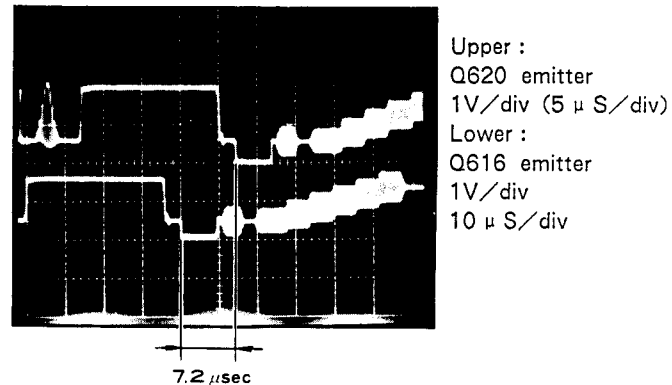


Photo 7-9. VCO Center Frequency Adjustment

(5.) Sync Gate Timing Adjustment

- Adjust VR405 so that Q620 emitter video signal and the falling edge of the waveform at Pin ⑮ of IC402 (PA5009) have the timing shown in the Photo 7-10.

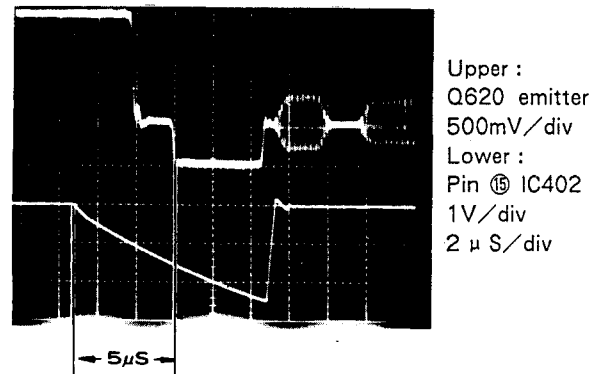


Photo 7-10. Sync Gate Timing Adjustment

(6.) Time Base Error Detection Adjustment

Note: Confirm that the VCO center frequency adjustment (VR3) is completed in advance.

- Connect Pin ⑨ of IC5 to the GND.
- Observe the waveform of Pin ⑪ of IC402 (PA5009) (time base error signal detected from the sync signal), and adjust VR404 so that the center of the amplitude is at DC 0V.
- Remove the connect between Pin ⑨ of IC5 and GND.

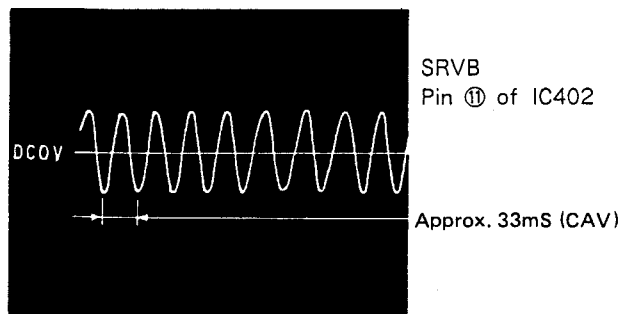


Photo 7-11. Time Base Error Detection Adjustment

(7.) Burst Gate Timing Adjustment

- Adjust VR403 so that the chroma rising edge of Q620 emitter video signal and the falling edge of the waveform at Pin ② of IC402 have the timing shown in the Photo 7-12.

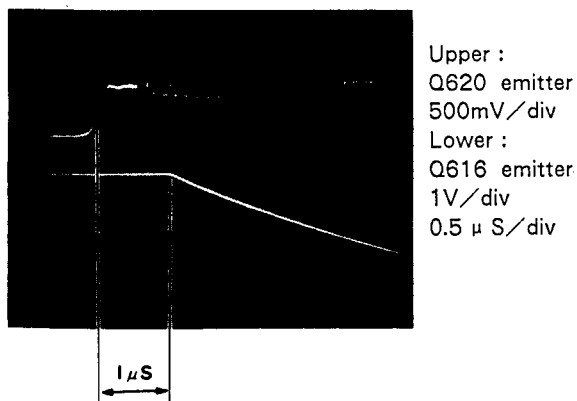


Photo 7-12. Burst Gate Timing Adjustment

(9.) SPDL (PLL) center frequency adjustment

- Adjust VR10 so that Pin ⑥ of IC6 (PA0018) becomes +100mV for Pin ② in the state in which PLL is locked (the state in which the disc is played back, and SPDL servo loop is locked.)

(10.) PD0011 clock frequency adjustment (TC201)

- Turn off the power switch.
- Connect between Pins ③ and ④ and between Pins ⑤ and ⑥ of IC202 (PD5029). And connect Pin ③ of IC204 (PD0011A) to Pin ② of the same IC204 using the 10kΩ resistor, and connect Pin ③ of IC204 to the frequency counter.
- Turn on the power switch.
- Adjust TC201 so that the frequency is 3.00MHz ± 0.05 MHz.

(8.) Hue Correction Circuit Adjustment

- Search to frame #26,101.
- Rotate VR401 fully in the counterclockwise direction.
- Observe the video signal from Pin ① of IC501 (PA9003) and adjust VR501 so as to minimize chrominance envelope undulation.
- Watch the screen, and adjust VR401 so that there is minimum color smearing of the magenta picture.

7.2. ADJUSTMENT OF CHANGER SYSTEM IN LDP UNIT

The precautions for adjustment, instruments used, and preparations are the same as for the LDP section.

7.2.1. Horizontal Travel System

7.2.1.1. Handling of HD Shutter

Tightening the set screw with the set screw position lined up the mark causes the tip of the set screw to enter the hole, setting the position.

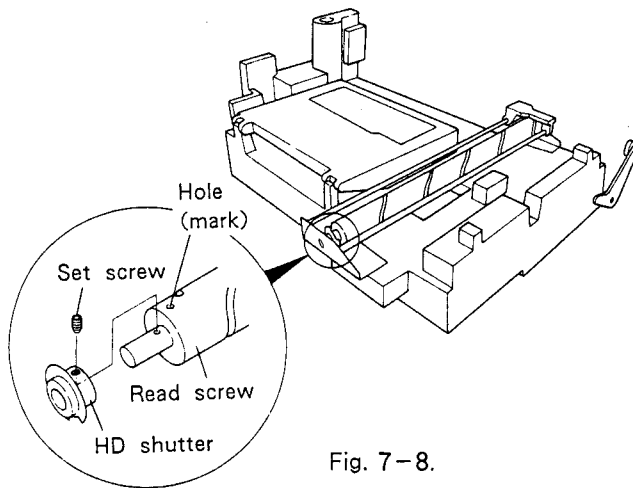


Fig. 7-8.

7.2.2. Horizontal Adjustment of Mechanism (B) Assembly

7.2.2.1. Windage Angle Adjustment

Be sure to perform 7.2.2.2 Tilt Sensor Angle Adjustment when adjusting the windage angle. Play the test disc and set to the still mode at frame #16,969 (tilt center point). Rotate the adjustment flange using the wrench (or equivalent) shown in Fig. 7-9, for fine adjustment so that the DC component of the voltage at C31 ($4.7 \mu\text{F}/135\text{V N.P}$) terminal (focus coil voltage) in the PREB assembly (VWV-079) is $0 \pm 0.1\text{V}$.

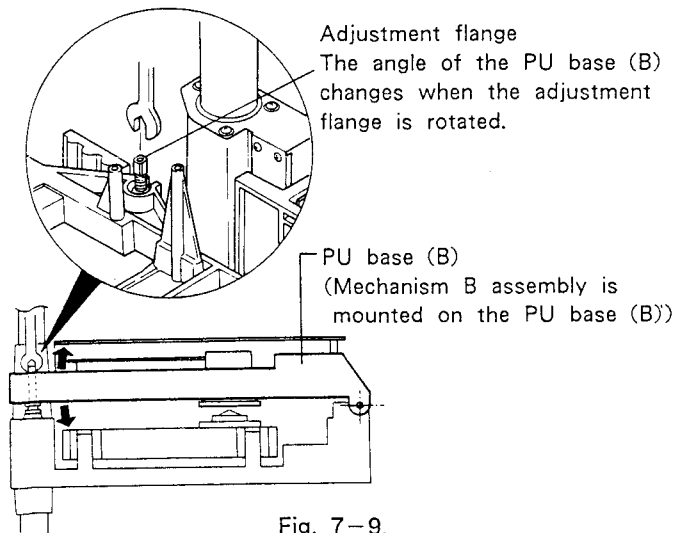


Fig. 7-9.

7.2.2.2. Tilt Sensor Angle Adjustment

After having fixed the adjustment flange in place with the set screw, perform the tilt sensor angle adjustment.

1. Remove the connections of the tilt motor and PREB assembly (CN34).
2. Play the test disc, set to the still mode at frame #17,000, and measure the voltage at terminal C31.
3. With the unit set to the still mode at frame #100, confirm that the C31 terminal voltage is within $\pm 50\text{mV}$ of the voltage measured above. (If this specification is not satisfied, manually rotate the TILT motor and adjust until satisfied.)
4. Set to the still mode at frame #104, and adjust the tilt sensor angle adjustment screw so that the voltage at TP7 of the PREB assembly is $0\text{V} \pm 0.1\text{V}$.
5. Restore the TILT motor and PREB assembly (CN34) connections.

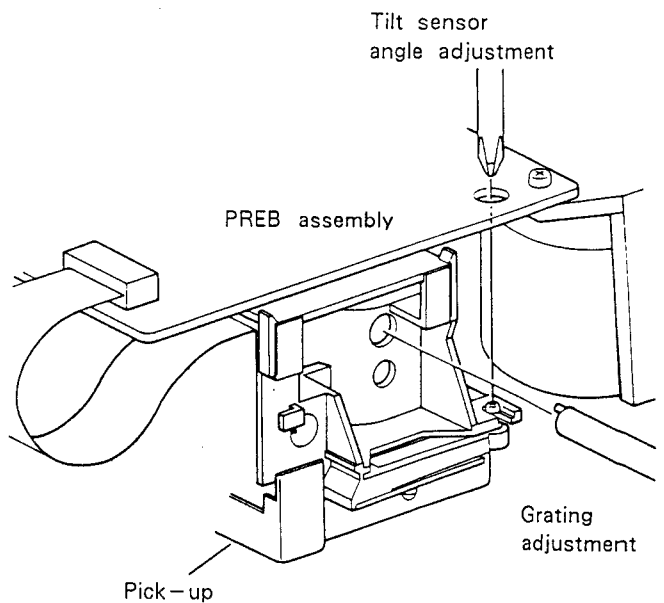


Fig. 7-10. Pick-up Adjustment Locations

7.3. MAIN UNIT SECTION

Precautions on Adjustment

The power is turned on by the same procedure as for the LDP section.

For the VMDB assembly (pulse width adjustment), adjustment is performed with the VH base moved in the up or down direction using the manual UP or DOWN key in the door open state.

DACB assembly (VCO free-run, VCXO offset) adjustments are performed after playing back the LDD

in manual mode (refer to section 9 on the service mode).

Jigs/Tools Required for Adjustment

- Oscilloscope
- Digital multimeter
- LDD-compatible CLV disc

7.3.1 Signal Output Section

7.3.1.1 DACB (DWK1002) Assembly Adjustment

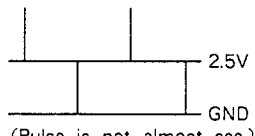
Item	Adjustment items and points	Descriptions	Specified value
1	VCO FREE RUN adjustment DACB assembly VL1 (DWK1002)	<ol style="list-style-type: none"> 1. Play back LDD disk. 2. Connect Pin ⑤ of IC4 and Pin ② of Q5 to GND. 3. Measure DC voltage at Pin ⑦ of IC5 and adjust for V0. 4. Remove IC4 and Q5. (Confirm that LED lights at this time.) 5. Adjust VL1 so that DC voltage at Pin ⑦ of IC5 is $V0 \pm 0.6V$. 	$V0 + 0.6V$ $\pm 100mV$
2	VCXO off-set adjustment DACB assembly VR1 (DWK1002)	<ol style="list-style-type: none"> 1. Play back LDD disk. 2. Confirm that LED is lit. 3. Adjust VR1 so that Pin ③ of IC1 is as shown in the figure right. 	 2.5V GND (Pulse is not almost see.)

Table 7-3.

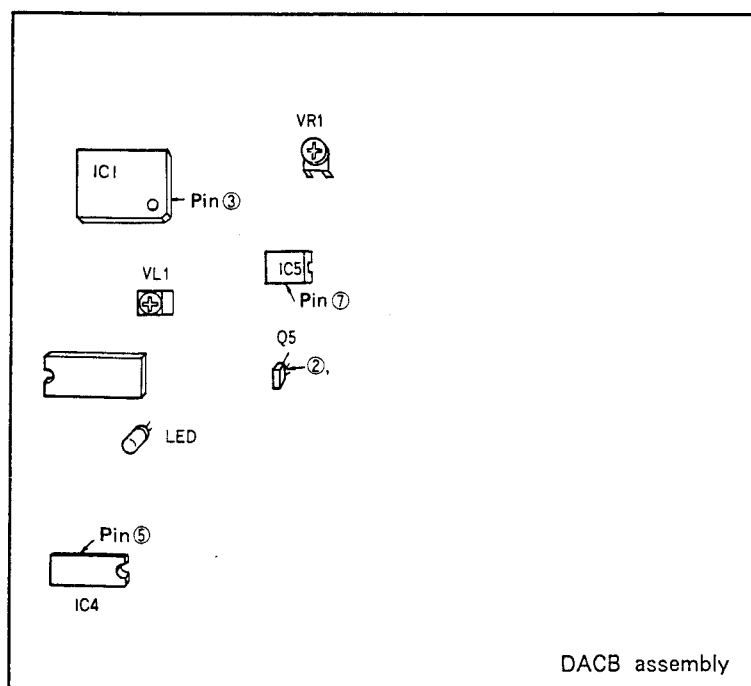


Fig. 7-11.

7.3.2. Vertical Travel System

7.3.2.1. Adjustment of VD Pulley Attachment Position

The set screw position is lined up with the V-cut on the shaft, and tightened with the shaft tip lined up with the pulley flange edge.

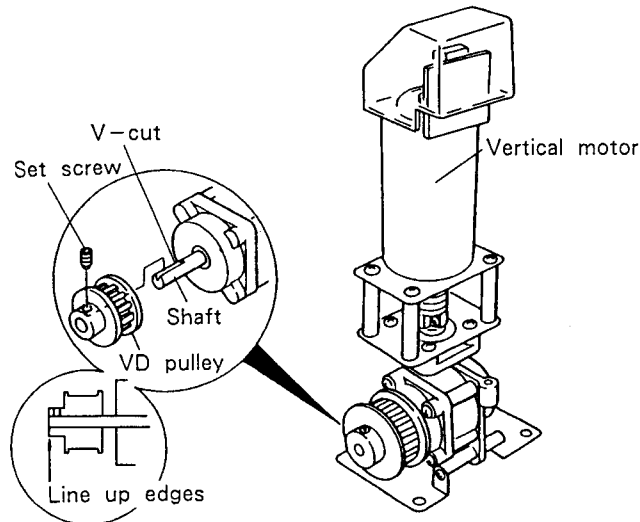


Fig. 7-12.

7.3.2.2. Timing Belt Tension

Adjust the nut so that tension of $8 \pm 1\text{kg}$ is applied.

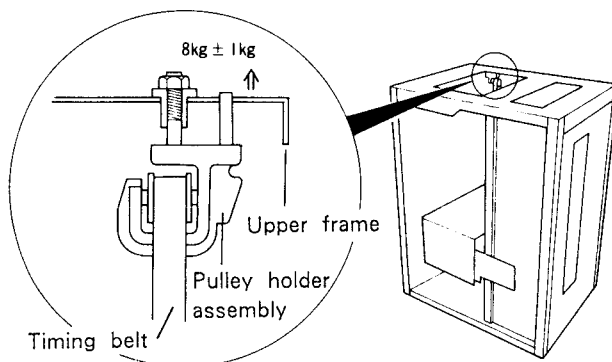


Fig. 7-13.

7.3.2.3. Encoder Plate Adjustment

The position of the encoder plates is adjusted and the plates fixed in place so that the gap between the upper and lower encoder plates and photo-interrupters is the same. (Adjust at top and bottom by loosening the two center screws.)

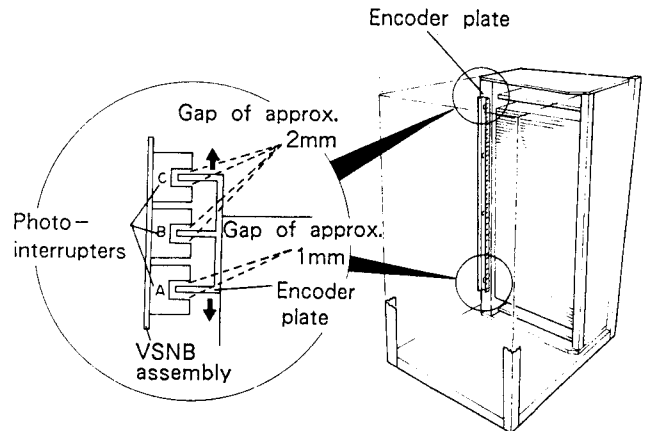


Fig. 7-14.

7.3.2.4. VMDR (DWP1005) Assembly Adjustment

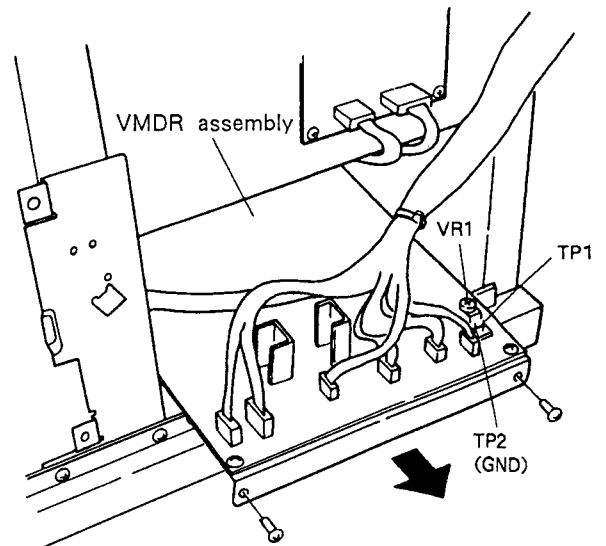


Fig. 7-15.

Item	Adjustment Name and Location	Adjustment Specifications	Adjustment Value
1	Pulse width adjustment VR1 of VMDR assembly (DWP 1005)	① VR1 of VMDR assembly is set to its mechanical center. ② With VH base set to up or down position using manual UP or DOWN key (vertical motor rotated in range of lowest to speed 2), TP1 of the VMDR assembly is observed with an oscilloscope, and VR1 (10k Ω semi-fixed resistor) is adjusted so that the pulse width satisfies the conditions shown on the right.	

Table 7-4.

7.3.2.5. Disc Slit Gap Adjustment

When the disc slit is replaced, be sure to perform adjustment of the disc slit gap, and confirm that the vertical motor encoder pulse duty ratio and phase difference (7. 3. 2. 6).

Fix the disc slit in place with the hexagon head screw so that the gap between the photo interrupter and disc slit is $a=0.5\pm0.1\text{mm}$.

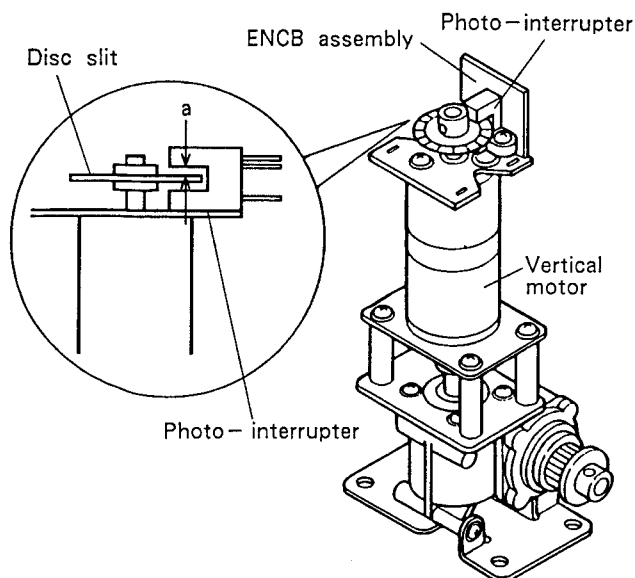
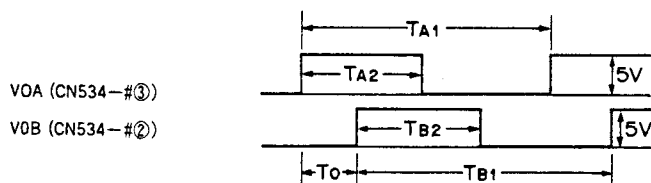


Fig. 7-16.

7.3.2.6. Confirmation of Vertical Motor Encoder Pulse Duty Ratio and Phase Difference

(1) With the door open, move the LDP unit in the UP (CCW rotation) and DOWN (CW rotation) directions using the manual UP and DOWN keys, and confirm that the duty ratio and phase difference at CN534 Pin ③ (VOA) and Pin ② (VOB) of the VMDR assembly satisfies the following conditions for both CW rotation and CCW rotation.

(CW rotation as seen from motor shaft)



(CCW rotation as seen from motor shaft)

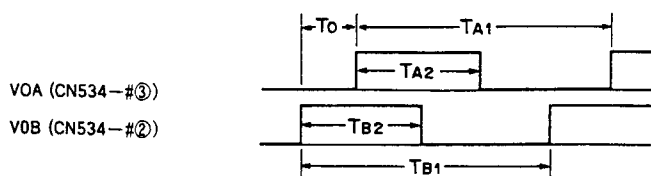


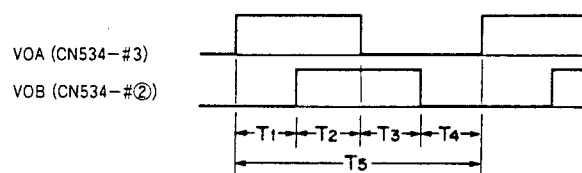
Fig. 7-17.

	Calculation Method	Rating
Duty Ratio	$DA \text{ (cw, ccw)} = \frac{TA2}{TA1} \times 100 \text{ (\%)}$ $DB \text{ (cw, ccw)} = \frac{TB2}{TB1} \times 100 \text{ (\%)}$	DA, DB (cw, ccw) = 40 to 60%
Phase Difference	$O \text{ (cw)} = \frac{TO}{TA1} \times 360 \text{ (°)}$ $O \text{ (ccw)} = \frac{TO}{TB1} \times 360 \text{ (°)}$	O (cw, ccw) = 90 to 120°

Table 7-5.

(2) If the above specifications are not satisfied, make sure that the following specifications are satisfied.

(CW rotation as seen from motor shaft)



(CCW rotation as seen from motor shaft)

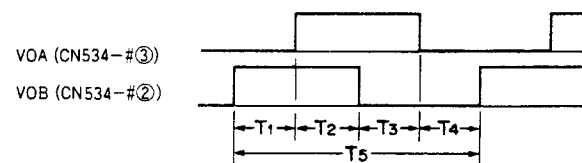


Fig. 7-18.

	Calculation Method	Rating
Division Ratio	$D1 \text{ (cw, ccw)} = \frac{T1}{T5} \times 100 \text{ (\%)}$ $D2 \text{ (cw, ccw)} = \frac{T2}{T5} \times 100 \text{ (\%)}$ $D3 \text{ (cw, ccw)} = \frac{T3}{T5} \times 100 \text{ (\%)}$ $D4 \text{ (cw, ccw)} = \frac{T4}{T5} \times 100 \text{ (\%)}$	D1 to 4 (cw, ccw) = 50 to 60%


Table 7-6.

(3) There is a malfunction in the vertical motor rpm detection system if neither the specifications in (1) nor (2) are satisfied.

7.3.2.7. Adjustment of LDP Unit Upper and Lower Stop Positions

(Viewed with left side panel removed)

Adjust the height of the VD sensor plate B assembly so that there is minimum overlap or gap between the tray and guide roller when the tray is pulled into the LDP unit.

The sensor plate B assembly can be raised and lowered by loosening screw ① and rotated by inserting a flat blade screwdriver into the  hole of the sensor plate. (The stop position is lowered by raising the sensor plate B assembly.)

(Note)

This adjustment was completed before shipping. Adjustment is not necessary unless there is a change in the stop positions.

(The overlap or gap between the tray and guide roller should be less than 1mm.)

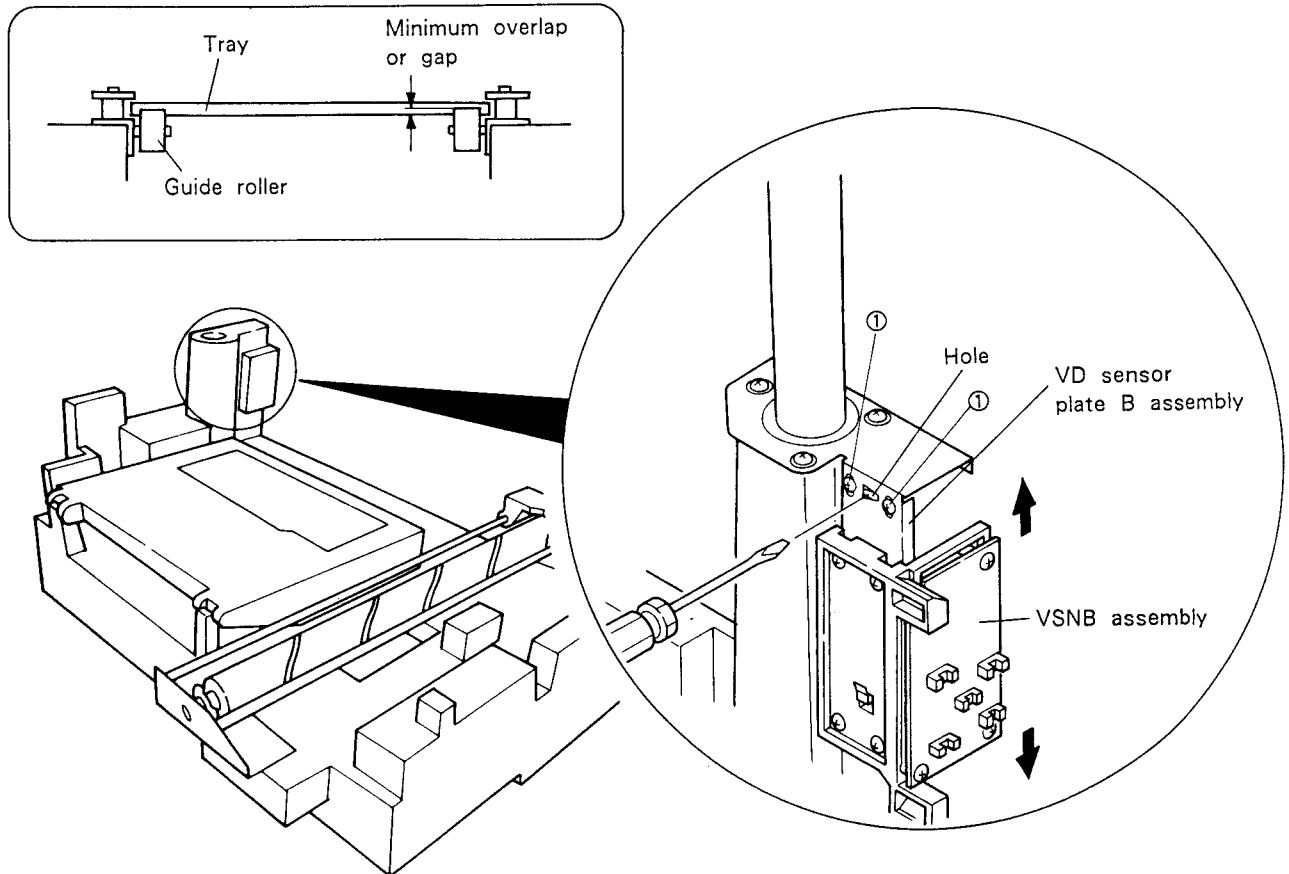


Fig. 7-19.

8. DISASSEMBLY

Always mark connectors with a felt-tip pen before removing assemblies. This will prevent wiring mistakes when reassembling the assemblies.

8.1 OPENING THE DOOR

1. Push down the door lock release knob located above and below the door to open (in case the door is key-locked, unlock it first with the key and then push the knob down). See Fig. 8-1.

When either door lock is released, the unit is set to the disc replacement mode by the control IC. In this mode, the LDP unit can be moved up and down with the manual operation switches located on the upper base. To set the changer operation mode with the door open, set the DRDS assembly — which is interlocked to the door lock — to the “door locked” condition (in practice, CN515 on the MCCB assembly is short-circuited). See Fig. 9-1 on page 142.

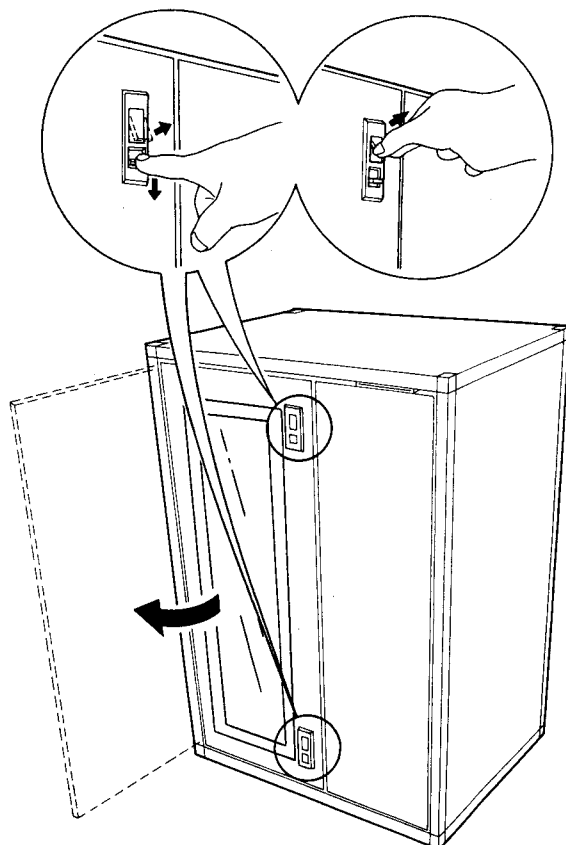


Fig. 8-1. Opening the Door

8.2 REMOVAL OF THE DOOR AND THE FRONT BOARD

■ Removing the Door

1. Open the door.
2. Loosen the screw ①, which secures the door arm.
3. Slide the arm outwards, then remove it passing the screw through the wider portion of the slot.
4. Detach the upper and lower arms in this way, then remove the door.

■ Removing the Front Board

1. Open the door.
2. Remove the three screws ② which are securing the front board.
3. Slide the front board left and remove it. Now a basic inspection can be performed on the LC-V300.

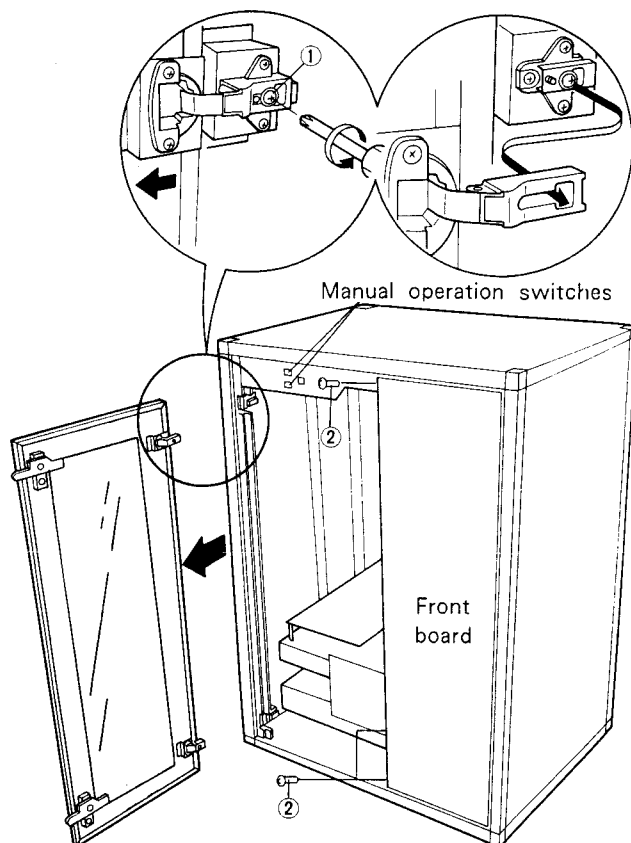


Fig. 8-2. Removal of Door and Front Board

8.3 REMOVAL OF UPPER PLATE

1. Remove the four screw covers ① using the slotted screwdriver.
2. Remove the four screws ② fixing the upper plate.

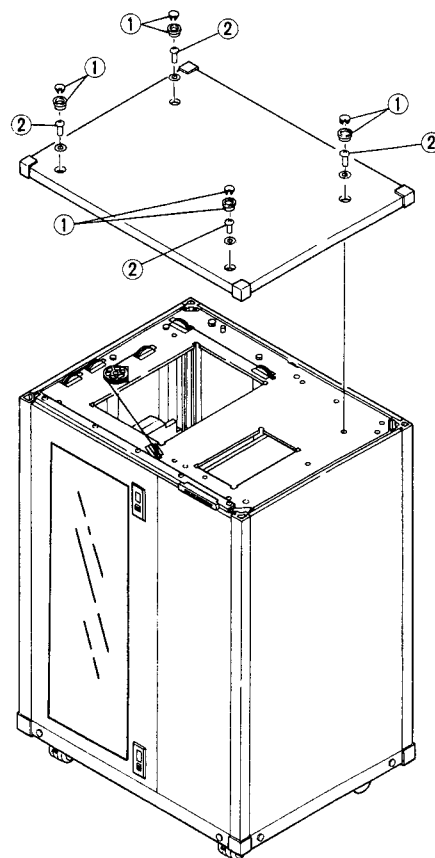
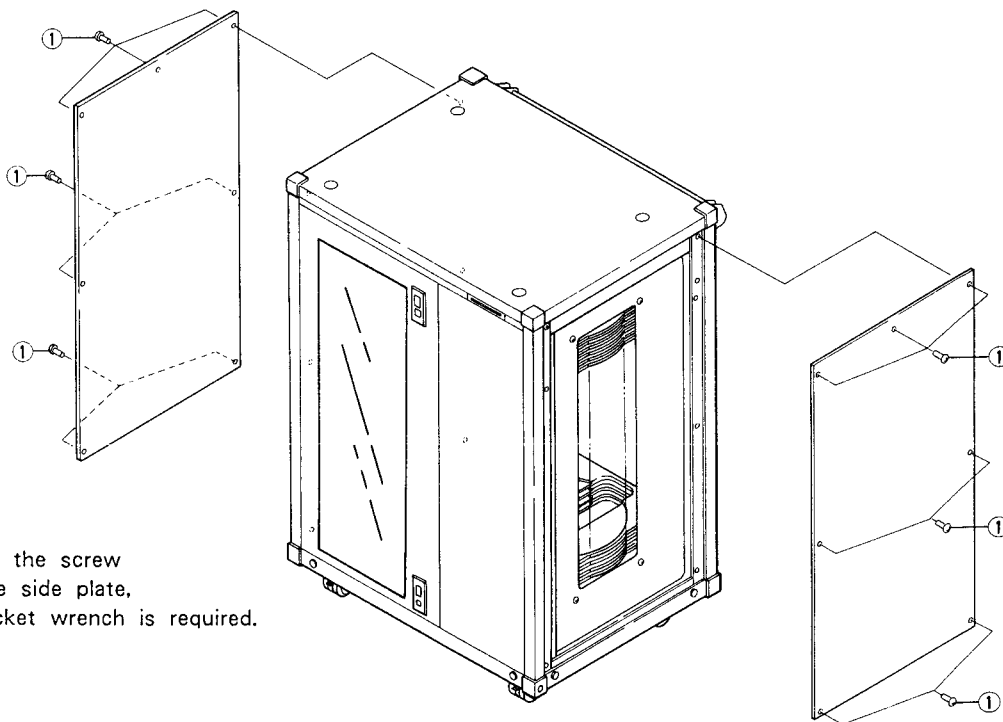


Fig. 8-3. Removal of Upper Plate

8.4 REMOVAL OF SIDE PLATE



When loosening the screw ① securing the side plate, a hexagon socket wrench is required.

Fig. 8-4. Removal of Side Plate

8.5 REMOVAL OF REAR PLATE

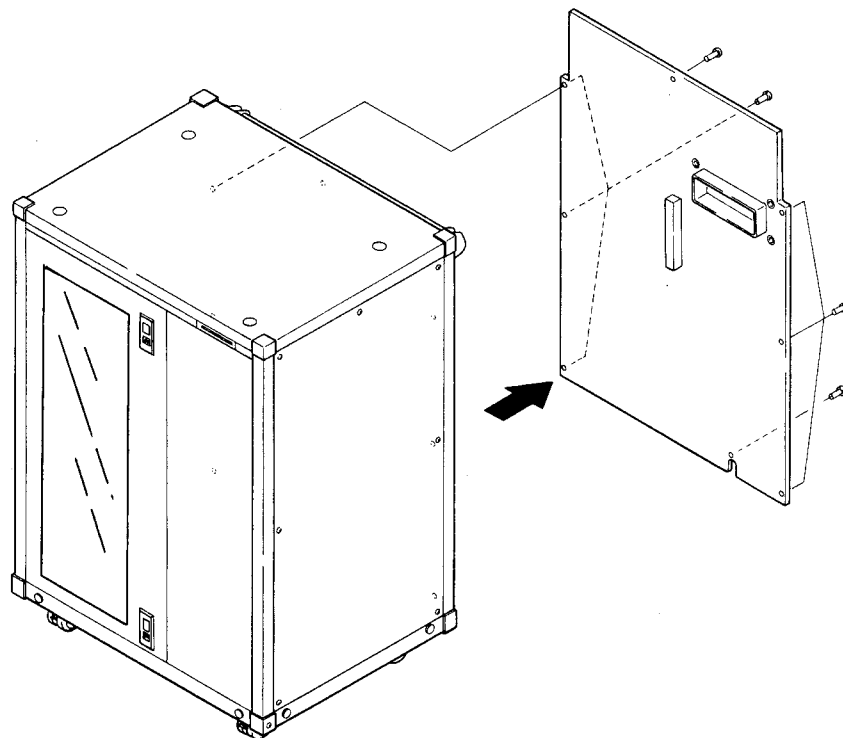


Fig. 8-5. Removal of Rear Plate

8.6 REMOVAL OF MECHANISM A ASSEMBLY

1. Lift the LDP unit.
2. Remove all connectors of mechanism A assembly.
3. Remove three mount screws while holding the mechanism A assembly with your hand.

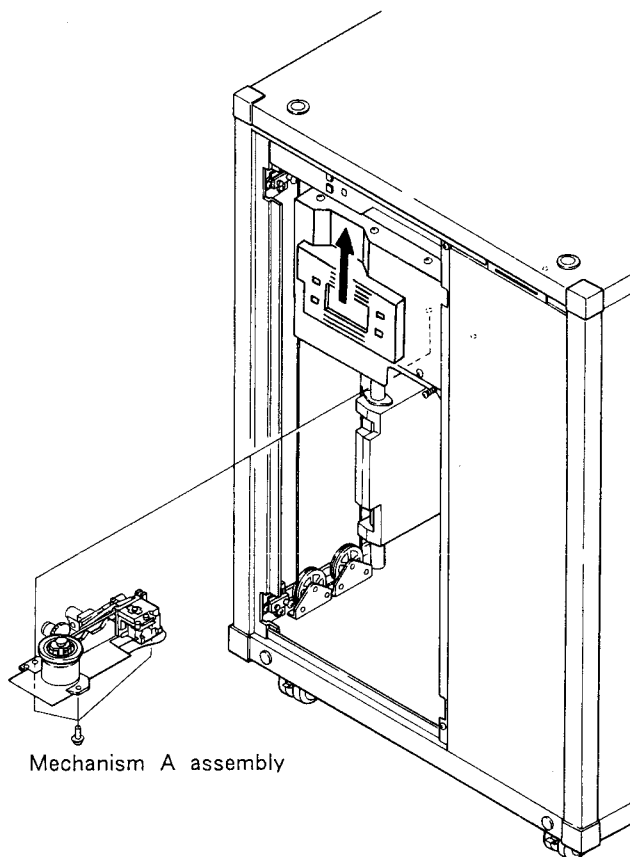


Fig. 8-6. Removal of Mechanism A Assembly

8.7 REMOVAL OF MECHANISM B ASSEMBLY

1. Lower LDP unit.
2. Remove VH cover and VH cover F.
3. Rise SRVB assembly.
4. Remove all connectors of the mechanism B assembly.
5. Remove three mount screws of the mechanism B assembly and the GND cable mounting screw.

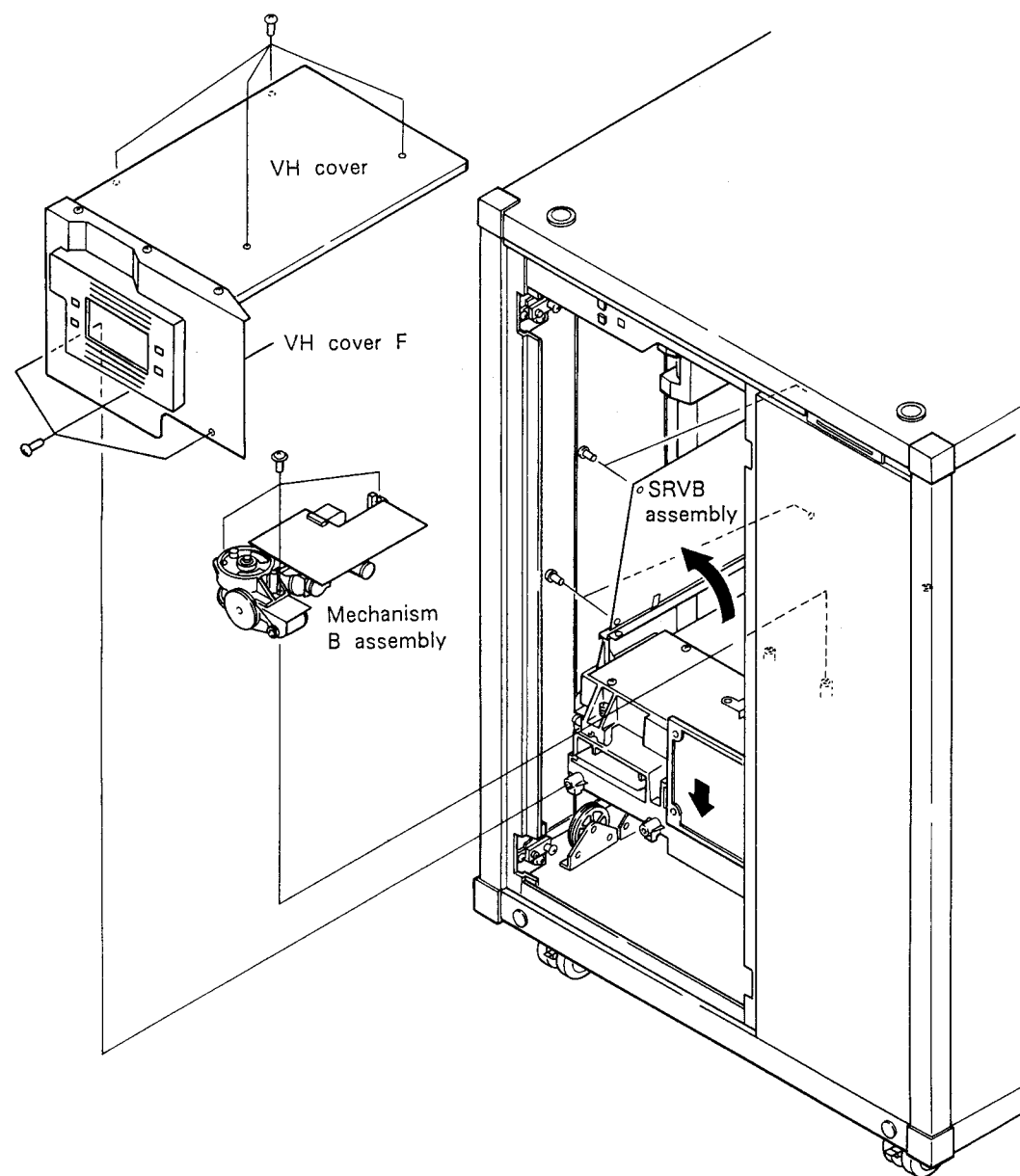
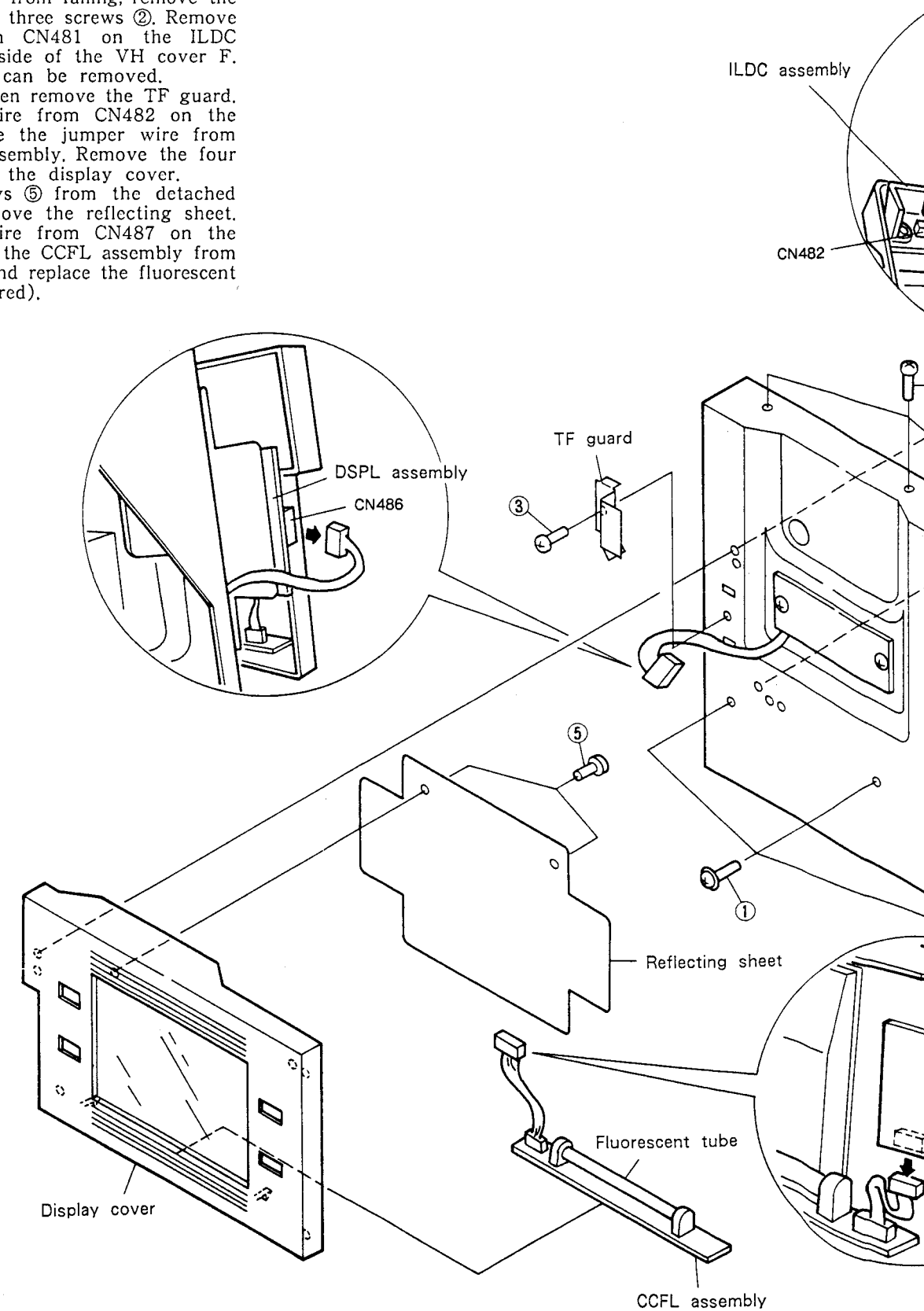


Fig. 8-7. Removal of Mechanism B assembly

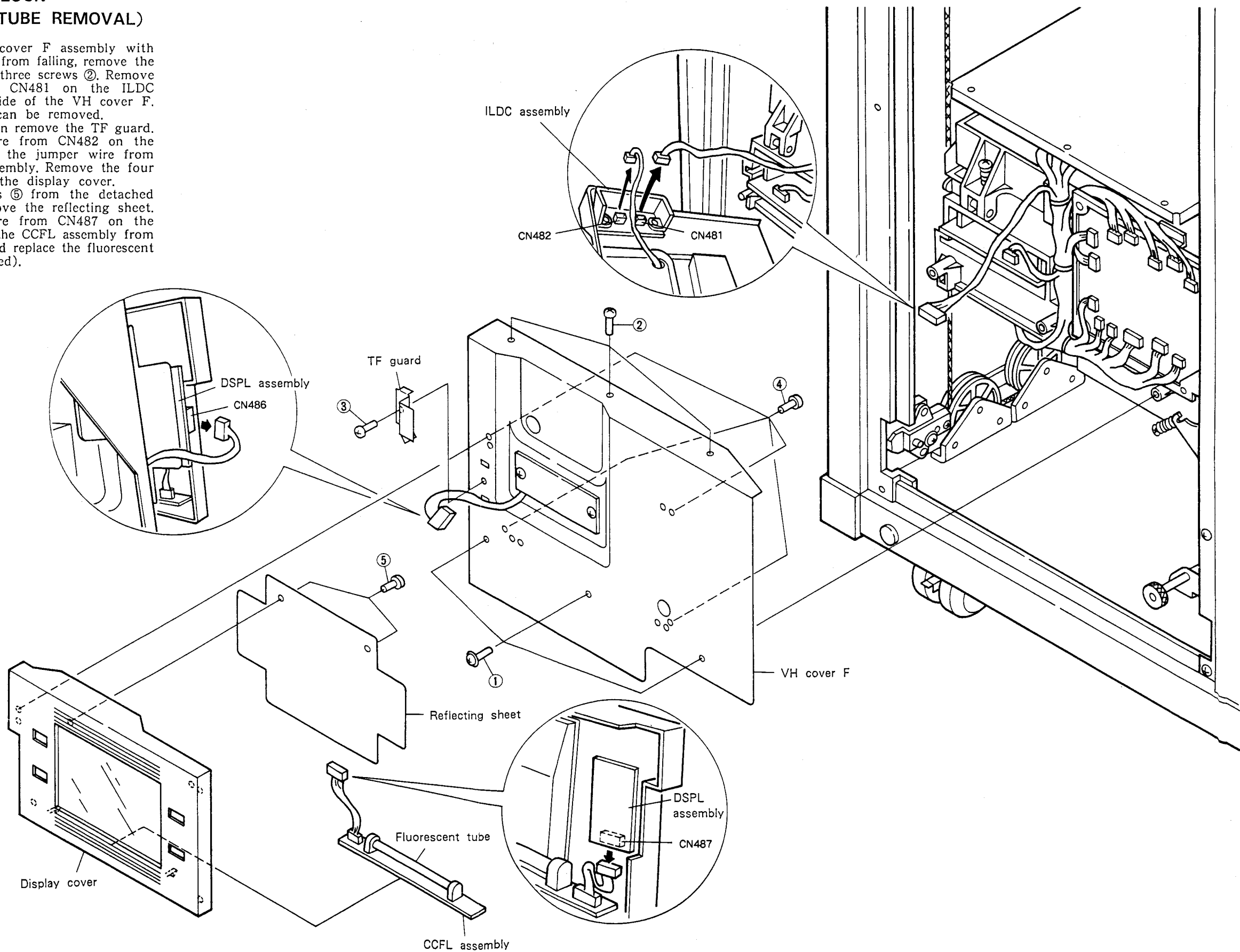
8.8 ILLUMINATION BLOCK (FLUORESCENT TUBE REMOVAL)

1. While holding the VH cover F assembly with your hand to prevent it from falling, remove the three screws ① and the three screws ②. Remove the jumper wire from CN481 on the ILDC assembly on the back side of the VH cover F. Then the VH cover F can be removed.
2. Remove the screw ③, then remove the TF guard.
3. Remove the jumper wire from CN482 on the ILDC assembly. Remove the jumper wire from CN486 on the DSPL assembly. Remove the four screws ④, then remove the display cover.
4. Remove the two screws ⑤ from the detached display cover, then remove the reflecting sheet.
5. Remove the jumper wire from CN487 on the DSPL assembly. Release the CCFL assembly from the hooks, take it out and replace the fluorescent tube (the tube is soldered).



8.8 ILLUMINATION BLOCK
(FLUORESCENT TUBE REMOVAL)

- 1. While holding the VH cover F assembly with your hand to prevent it from falling, remove the three screws ① and the three screws ②. Remove the jumper wire from CN481 on the ILDC assembly on the back side of the VH cover F. Then the VH cover F can be removed.
- 2. Remove the screw ③, then remove the TF guard.
- 3. Remove the jumper wire from CN482 on the ILDC assembly. Remove the jumper wire from CN486 on the DSPL assembly. Remove the four screws ④, then remove the display cover.
- 4. Remove the two screws ⑤ from the detached display cover, then remove the reflecting sheet.
- 5. Remove the jumper wire from CN487 on the DSPL assembly. Release the CCFL assembly from the hooks, take it out and replace the fluorescent tube (the tube is soldered).



9. SERVICE MODE INFORMATION

9.1. OUTLINE

LC-V300 is equipped with a service mode for performing inspections and checks to operation. The service mode allows the operation in the various modes to be observed visually using the D1 through D15 LEDs on the MCCB assembly. To take advantage of this features, remove the front door and front panel to allow observation of the MCCB assembly. Two alligator clips for shorting the 2-pin connectors (two places) are also needed.

The service mode has the following modes of operation.

1. Normal mode General operating mode
2. Manual mode Mode for checking individual operation

The points marked with the ● mark form major determination criteria for servicing.

- The status when a malfunction occurred can be displayed on the LEDs.
This can be confirmed in the normal mode (1).
In the normal mode, whether or not a malfunction occurred can be determined by the D15 LED of the MCCB assembly. The LED is illuminated when a malfunction occurred.
More detailed information on the malfunction can be obtained by pressing S101 and S102.

- It is possible to manually perform the various operations of the LC-V300 (for example, vertical, horizontal, and clamping operations), allowing for the abnormal operation to be detected. Before entering to each mode, connect the CO-V300 commander and turn it off once. Then after the unit is set to the conditions as the flowchart shown in Table. 9-1, turn the commander on to enter to various modes.

The parts location diagram for the CN514, CN515, S101, S102, and LEDs D1 through D15 on the MCCB unit is shown in Fig. 9-1.

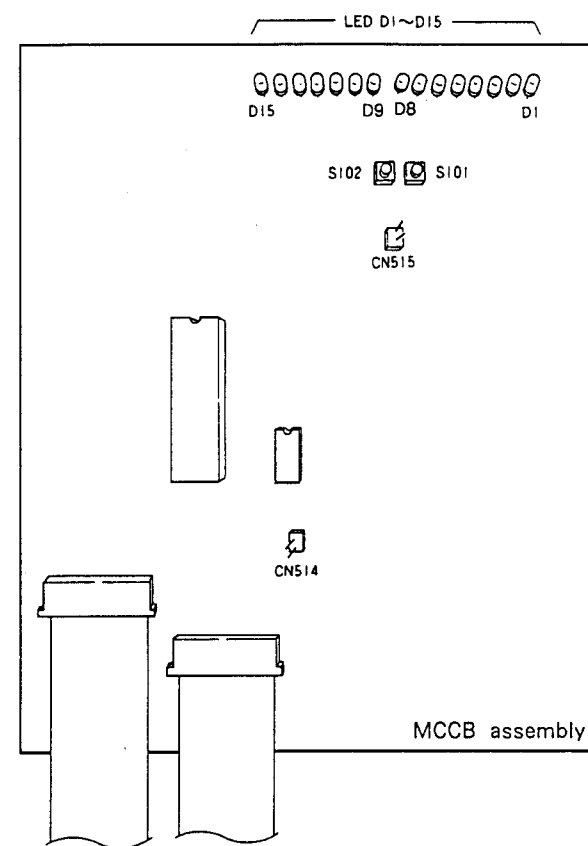


Fig. 9-1.

Mode	Set Status				Description of Status
	MCCB Unit				
	CN514 Terminal	CN515 Terminal	S101 S102	Pins ⑩ - ⑪ of IC1	
Normal mode (mode for disc replacement)	Open	Open	Both OFF	—	The mode for replacing the disc is selected and the LDP unit can be moved up and down using a manual key switch.
Normal mode (changer operation mode)	Open	Shorted (same state as when door is closed.)	Both OFF	—	The changer operation mode is selected and normal operation of the changer is possible with the door open. This also allows for determination of malfunction. (See page 143)
Manual mode	Shorted	Open	Turn ON both at the same time and turn OFF again within 10 seconds of turning the power ON.	—	Vertical, horizontal, clamping, and changing can be operated by the manual key switches. The LDP can also be operated by the remote control jig. (See page 147)



Table 9-1.

9.2. ERROR DIAGNOSIS (NORMAL MODE)

9.2.1. Determination of Current Error

Preparation (Normal Mode)

- (1) Remove the front plate, and perform normal select operation with CN515 shorted (same state as when the door is closed).
- (2) When the malfunction recurs, LED D15 lights up to indicate an error.

Note :If the previous error indications remains and diagnosis is difficult, turn off the power once and turn it on again while pressing the UP  and DOWN  keys simultaneously to clear the previous error indication.

- 1) Operation mode at time of malfunction
Indicated by LEDs D14 to D9. (See Table 9-3.)
- 2) Type of malfunction
Indicated by LEDs D8 to D1. (See Table 9-4.)
- 3) Detailed information on operation mode and state of each sensor.
For confirmation press S101 or S102.
The switches are used in the same way as described in 9.3. Checking Current Status of Operation (page 145).

9.2.2. Checking Previous Errors


Preparation (Previous Errors in Manual Mode)

- (1) Remove the front plate and short-circuit CN514 with the power off.
- (2) Turn on the power while pressing S101 and S102 simultaneously. (Release both switches within 10 seconds.)
(The LEDs light up in order to indicate that the manual mode is entered.)
- (3) To change to the previous error mode, use S101 or S102 and set as follows.

The ● mark indicates lit LEDs.

D11	D10	D9	
●	○	●	⇒ Previous error mode


Note: A detailed description of the other LEDs is given in 9.4. Manual Mode.

- (4) Set the previous error to be checked with the UP  key.
(Up to eight errors are memorized including the current error.)

Up key	D3	D2	D1	Down key
↑ ↓				Indicates error mode which occurred last
↑ ↓			●	Indicates error mode one before last
↑ ↓		●		Indicates error mode two before last
↑ ↓		●	●	Indicates error mode three before last
↑ ↓	●			Indicates error mode four before last
↑ ↓	●		●	Indicates error mode five before last
↑ ↓	●	●		Indicates error mode six before last
↑ ↓	●	●	●	Indicates error mode seven before last

The ● mark indicates lit LEDs.

Table 9-2.

- (5) After selecting the previous error, when the DOWN  key is held down LEDs D14 to D1 indicate the error and the cause of the malfunction can be determined by referring to Tables 9-3, and 9-4.

Operation Mode at Time of Malfunction Indicated by LEDs D14 to D9.

Lit LED	D14	D13	D12	D11	D10	D9
Corresponding mode	(Door) While the door is open.	(Resetting) While the tray is returned to the rack.	(LDP) During playback of LDP.	(Setting) While a disc is being set in the LDP.	(Wait) While waiting for data from the commander.	(Initial) During mechanism initialization.

Table 9-3.

Cause of mal

D5	D4	D3	D2
		●	
		●	
		●	
	●		
	●		
	●		
	●		
	●	●	
	●	●	
	●	●	
	●	●	
●			
●			
●			
●			
●		●	
●		●	
●		●	

The ● mark indicates

Diagnosis exa

Step 1

15

●

↑

(a)

Malfunction
present

Step 2

✖ Error determined

9.2. ERROR DIAGNOSIS (NORMAL MODE)

9.2.1. Determination of Current Error

Preparation (Normal Mode)

- (1) Remove the front plate, and perform normal select operation with CN515 shorted (same state as when the door is closed).
- (2) When the malfunction recurs, LED D15 lights up to indicate an error.

Note :If the previous error indications remains and diagnosis is difficult, turn off the power once and turn it on again while pressing the UP and DOWN keys simultaneously to clear the previous error indication.

- 1) Operation mode at time of malfunction Indicated by LEDs D14 to D9. (See Table 9-3.)
- 2) Type of malfunction Indicated by LEDs D8 to D1. (See Table 9-4.)
- 3) Detailed information on operation mode and state of each sensor. For confirmation press S101 or S102. The switches are used in the same way as described in 9.3. Checking Current Status of Operation (page 145).

9.2.2. Checking Previous Errors

Preparation (Previous Errors in Manual Mode)

- (1) Remove the front plate and short-circuit CN514 with the power off.
- (2) Turn on the power while pressing S101 and S102 simultaneously. (Release both switches within 10 seconds.) (The LEDs light up in order to indicate that the manual mode is entered.)
- (3) To change to the previous error mode, use S101 or S102 and set as follows.

The mark indicates lit LEDs. D11 D10 D9 Previous error mode

Note : A detailed description of the other LEDs is given in 9.4. Manual Mode.

- (4) Set the previous error to be checked with the UP key. (Up to eight errors are memorized including the current error.)

Up key	D3	D2	D1	Down key
↑ ↓				Indicates error mode which occurred last
↑ ↓			●	Indicates error mode one before last
↑ ↓		●		Indicates error mode two before last
↑ ↓		●	●	Indicates error mode three before last
↑ ↓	●			Indicates error mode four before last
↑ ↓	●	●		Indicates error mode five before last
↑ ↓	●	●	●	Indicates error mode six before last
↑ ↓	●	●	●	Indicates error mode seven before last

The mark indicates lit LEDs.

Table 9-2.

- (5) After selecting the previous error, when the DOWN key is held down LEDs D14 to D1 indicate the error and the cause of the malfunction can be determined by referring to Tables 9-3. and 9-4.

Operation Mode at Time of Malfunction Indicated by LEDs D14 to D9.

Lit LED	D14	D13	D12	D11	D10	D9
	(Door)	(Resetting)	(LDP)	(Setting)	(Wait)	(Initial)
Corresponding mode	While the door is open.	While the tray is returned to the rack.	During playback of LDP.	While a disc is being set in the LDP.	While waiting for data from the commander.	During mechanism initialization.

Table 9-3.

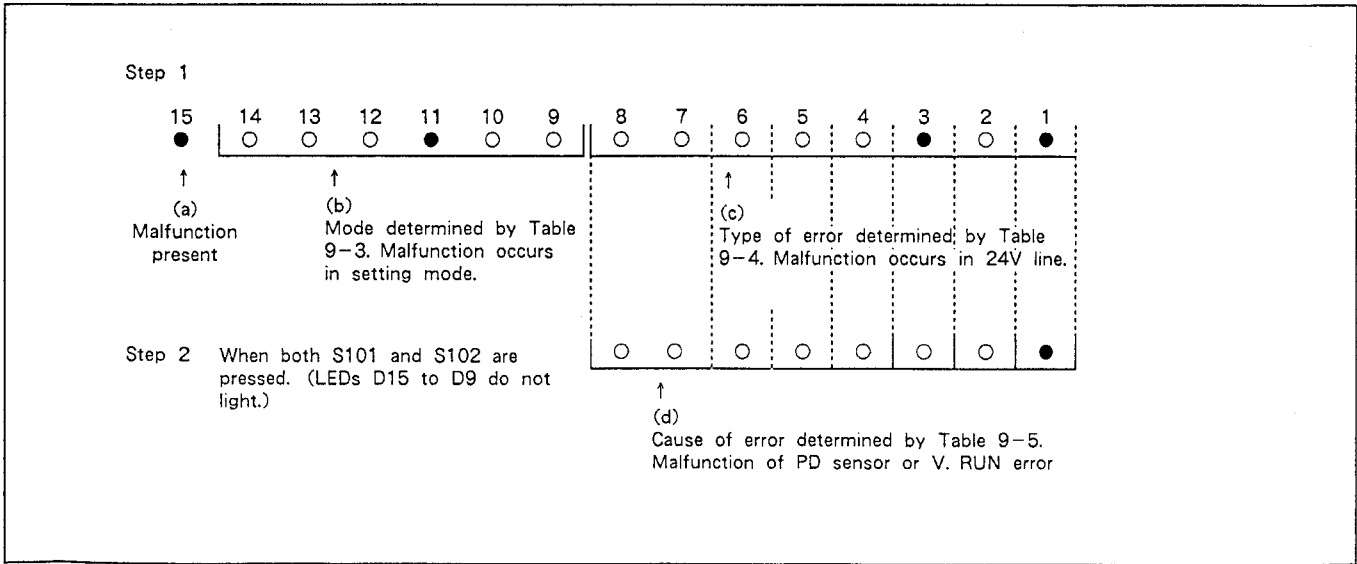
Cause of malfunction Indicated by LEDs D8 to D1.

D5	D4	D3	D2	D1	Description of malfunction
				●	Vertical limit switch malfunction ; for example upper limit switch, lower limit switch, or both switches ON etc.
			●		Vertical address count error
			●	●	Vertical motor out of control, or detection pulse error
		●			Vertical out of control (address count lap time error)
		●		●	24V line trouble, for example broken 4A fuse
		●	●		Malfunction caused by vertical limit switch or address count error
●					Selection not completed within time limit (30 seconds)
●				●	Change motor operation not completed within time limit
●			●		Change switch malfunction
●			●	●	Horizontal limit switch malfunction ; IN and OUT both switches ON, etc.
●	●				Horizontal plunger system malfunction
●	●			●	Clamp limit switch malfunction ; both switch ON etc.
●	●	●	●		Operation of tray to LDP direction not completed within time limit during horizontal initialization
●	●	●	●	●	Horizontal rotary sensor malfunction
●					Faulty AV select signal from LDP ; continuously "L"
●				●	Protrusion detect sensor system malfunction ; detects disc tray ejected state
●			●		EEPROM malfunction ; back-up data write error
●			●	●	Disc detection sensor or size sensor malfunction
●		●			Disc detection sensor or tray malfunction
●		●		●	Horizontal operation not completed within time limit
●		●	●		Clamp operation not completed within time limit

The mark indicates lit LEDs.

Table 9-4.

Diagnosis example for section 9.2.1.



※Error determined by results of (c) and (d) as malfunction in the 24V line of vertical run system.

Fig. 9-2.

9.3. CHECKING CURRENT STATUS OF OPERATION

9.3.1. Current Status of Operation

Observe the LEDs while pressing S101.

Preparation (1) Remove the front plate, and perform normal select operation with CN515 shorted (same state as when the door is closed).

(2) Set the operation condition to be checked and perform discrimination using S101 (Table 9-5.) or S102 (Table 9-6.).

					D14 lights	D13 lights	D12 lights	D11 lights	D10 lights	D9 lights
D5	D4	D3	D2	D1	DOOR mode	Resetting	LDP mode	Setting	Wait	Initial
				●	DOOR mode		CHG. M.B. RUNSET	PD. SENSOR CHECK V. RUN		SPDL STOP
			●				Waiting for CHG. M.B. STOP	EEPROM ADDRES. WRITE		CHENG. M SIDE. A. RUN
			●	●		H. TRAY RUN	SEARCH. START	H. LDP RUN		CLAMP DOWN RUN
		●				V. position search RUN	Waiting for SEARCH. END	CLAMP UP RUN		H. TRAY RUN
		●		●		CHENG M.A CLAMP DOWN RUN	Start request transmission to CO			H. LDP RUN
		●	●				Chapter repeat set			V. position search RUN
		●	●	●			Chapter repeat research			H. TRAY RUN
	●						D.A. squelch OFF		Waiting for DATA from CO	H. LDP RUN
	●			●			Audio detection set			V. ADDR READ from EEPROM
	●		●				End detection (PLAY)			PD. SENSR CHECK
	●		●	●			Transmission of STOP to LDP Transmission of END to CO			V. ADDRES CHECK
	●	●					DATA REQ transmission to CO while LDP waiting for STOP			V. RUN
	●	●		●			Waiting for DATA from CO			H. TRAY RUN
	●	●	●				AV SELECT confirmation			
	●	●	●	●			BGV mode START			
●							BGV mode PLAY			

The ● mark indicates lit LEDs.

Table 9-5.

9.3.2. Current Condition of Sensors Observe the LEDs while pressing "S102".

	During vertical operation	During horizontal operation	During other operation
D15	1	0	0
D14	0	1	0
D13	V. TRG sensor	0	0
D12	V. UP sensor	Tray lock SW	CHG. B SW
D11	V. DOWN sensor	H. tray end SW	CHG. A SW
D10	V. UP limit	H. LDP end SW	Clamp DOWN SW
D9	V. DOWN limit	H. rotary sensor	Clamp UP SW
D8	0	0	
D7	V. ADDRESS MSB	0	
D6	V. ADDRESS	SPINDL STOP	
D5	V. ADDRESS	EXT ACK	
D4	V. ADDRESS	Disc size 8/12	
D3	V. ADDRESS	Disk loaded/not loaded	
D2	V. ADDRESS	Music end	
D1	V. ADDRESS LSB	AV select	

Table 9-6.

9.4. MANUAL OPERATION AND INSIDE/OUTSIDE ADJUSTMENT (MANUAL MODE)

Preparation (1) Remove the front plate and short-circuit CN514 with the power off.

(2) Turn on the power while pressing both S101 and S102. (When S101 and S102 are released within 10 seconds, the unit enters the display mode of the manual mode, the LEDs light up in sequence. When the switches are held down for more than 10 seconds, the unit enters normal operation mode.)

Mode switching	D				Name of service mode	Manual keys		LED indication (D8 to D1) and description							
S101	12	11	10	9		Up	Down	D8	D7	D6	D5	D4	D3	D2	D1
	-	-	-	-	Display	x	x								
				●	Vertical	↑	↓	Tray address is indicated in binary form. Note: Address is indicated as actual address +2. ○○○○○○●●●●○○○●○○○							
			●		Horizontal	←	→					Tray lock	Tray end	LDP end	H.ROT sens
			●	●	Clamp	Clamped	Open							Clamped	Open
		●			A/B side	B	A	A side, B side	B side	SPDL run	ACK run	8 inch	No disc	No sound	Not AV sel
		●		●	Previous errors	Address change	Readout	To use this mode, refer to (9.2) Error Diagnosis.							
S102					inside adjustment ※	1 PLAY ↓ 2 #500 STILL ↓ 3 #400 PLAY ↓ 4 STILL	STOP	Set the disc in manual mode. 1. (PLAY start) Display indication on TV screen after playback has started. 2. (#500 STILL) Slowly turn PREB VR8 counterclockwise to the point where the indication changes from "P" to "L". 3. (#400 PLAY) Press the UP key when the indication changes from "L" to "P" to obtain a STILL picture. 4. (STILL) The frame number of the still picture should be within #500 to #1200.							
		●			Outside adjustment (12") ※	1 PLAY ↓ 2 #45050 STILL ↓ 3 #44200 PLAY ↓ 4 STILL	STOP	1. (PLAY start) Display indication on TV screen after playback has started. 2. (#45050 STILL) Slowly turn PREB VR9 counterclockwise to the point where the indication changes from "P" to "L". (48650 for N1-DISC) 3. (#44200 PLAY) Press the UP key when the indication changes from "P" to "L" to obtain a STILL picture. 4. (STILL) The frame number of the still picture should be within #44332 to #45050. (47932 and 48650 for N1-DISC)							
		●		●	Outside adjustment (8") ※	1 PLAY ↓ 2 #19220 STILL ↓ 3 #18400 PLAY ↓ 4 STILL	STOP	1. (PLAY start) Display indication on TV screen after playback has started. 2. (#19220 STILL) Slowly turn PREB VR10 counterclockwise to the point where the indication changes from "P" to "L". (21020 for N1-DISC) 3. (#18580 PLAY) Press the UP key when the indication changes from "P" to "L" to obtain a STILL picture. 4. (STILL) The frame number of the still picture should be within #18580 to #19220. (20380 to 21020 for N1-DISC)							

The * mark indicates that a N series disc is to be used for adjustment.

For adjustments marked ※ the TV monitor should be connected to the VIDEO terminal of LC-V300. (With CO-V300, muting is activated for still picture and other functions.)

Table 9-7.

The following is a description of the various modes shown in Table 9-7.

● Display test mode

This mode is selected first when the manual mode is entered. In this mode, LEDs D1 through D15 on the MCCB assembly and the LEDs on the DISP assembly are automatically illuminated one after the other for test purposes.

● Vertical mode

Manual UP key → UP

Manual DOWN key → DOWN

Pressing manual KEY OFF, causes operation to stop after movement to the closest designated stopping position.

Indication → V. address is indicate in binary form on D1 through D5 LEDs.

● Horizontal mode

Manual UP key → horizontal tray → LDP direction

Manual DOWN key → horizontal tray → rack direction

Stop by manual KEY OFF

Indication D4: TRAY LOCK SW Lit by off

D3: H. tray END SW Lit by off

D2: H. LDP END SW Lit by off

D1: H. rotary sensor SW Lit by off

● Clamp mode

Manual UP key → clamp UP

Manual DOWN key → clamp DOWN

Stop by manual KEY OFF

Indication D2: Clamp DOWN SW Lit by off

D1: Clamp UP SW Lit by off

● Change mode

Manual UP key → Side B
Manual DOWN key → Side A
Stop by manual KEY OFF

Indication D5: EXT ACK Lit by ACK RUN
D4: DISC size Lit by 8 inch
D3: DISC presence Lit by not loaded
D2: Music END Lit by no sounds
D1: AV select Lit by unselected

When the LDP is controlled by an external remote control jig, the side to be played is by selecting side A or B in the change mode and playing back. During play back, the side is not changed by this operation.

● Inside Position Adjustment Mode

Procedure

- 1) In the manual mode, load a test disc into the LDP.
- 2) Press the UP key to set the play mode.
- 3) If the UP key is pressed after playback, the unit will enter the still mode at frame #500.
- 4) Turn VR8 on the PREB assembly slowly counter-clockwise until the "P" indication changes to "L".
- 5) Press the UP key. Play will start from frame #400.
- 6) Press the UP key when the indication changes from "L" to "P".
- 7) The unit will enter the still mode, so confirm that frame number is within #500 to #1200.
- 8) If then you press the UP key, the unit will return to the condition in step 3). Repeat the procedure until a satisfactory result is obtained.
- 9) Stop operation with the DOWN key.

● 12 inch Outside Position Adjustment Mode

● 8 inch Outside Position Adjustment Mode

The procedure is basically the same as for inside adjustment. Use the UP key for play → search → play → still operations, and the DOWN key to stop. Table 9-8 shows the search chapters.

UP KEY				DOWN KEY
	Inside	12 inch Outside	8 inch Outside	
①	PLAY	PLAY	PLAY	STOP
②	#500 search Adjust to the point where the indication changes from "P" to "L"	#45050 search Adjust to the point where the indication changes from "P" to "L"	#19220 search Adjust to the point where the indication changes from "P" to "L"	
③	Play from #400 Press when the indication changes from "L" to "P" Still OK if within #500 to #1200	Play from #44200 Press when the indication changes from "P" to "L" Still OK if within #44332 to #45050	Play from #18400 Press when the indication changes from "P" to "L" Still OK if within #18580 to #119220	

Table 9-8.

9.5. Error Display Clear Mode

There is error indication when an error occurs, and there is no automatic clearing of error indications even when the malfunction is remedied. It is necessary to clear the indication by following the procedure outlined below.

● Clearing Error Indication

The error indication can be cleared by turning on the power while pressing the UP and DOWN keys.

Do not forget to clear the errors after completing repairs.

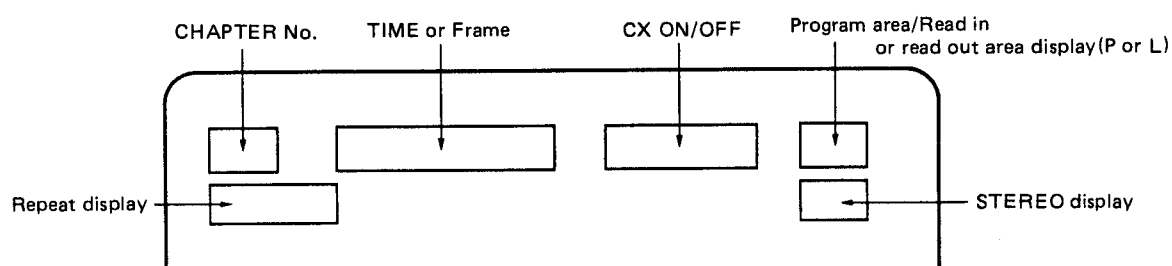


Fig. 9-3.

● Forward and reverse scan can be performed with the manual operation UP and DOWN keys while the LDP is in the play mode. This is not possible, however, when a BGV disc with chapters in it is loaded.

9.6. OTHER OPERATING STATUS INDICATIONS

9.6.1 DISC Presence Indication and DISC Size Indication

There are LEDs in the VCMD assembly for indicating the status of the DISC presence sensor and for indicating the status of the disc size sensor.

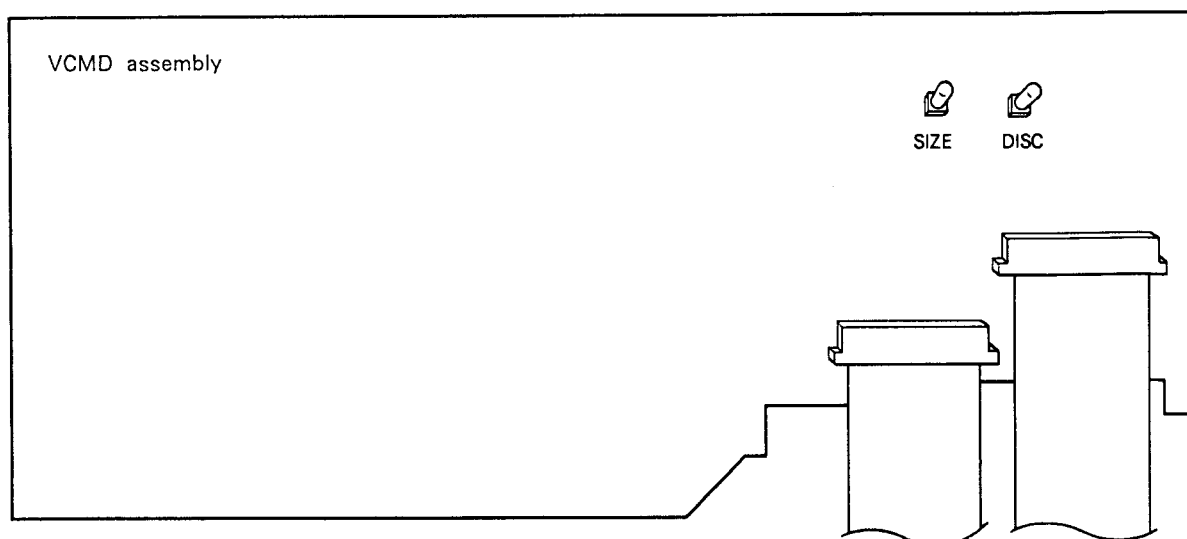
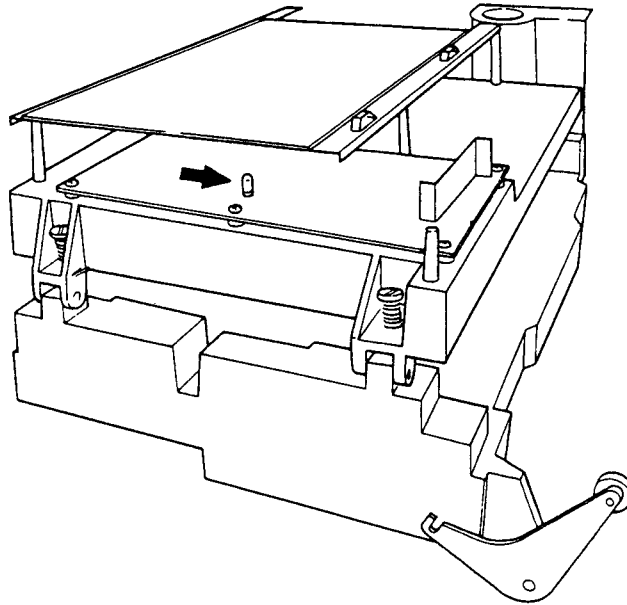


Fig. 9-4.

DISC.....Illumination indicates there is no disc.
SIZE.....Illumination indicates an 8-inch disc.

9.6.2 A/B Side Mode Indicator

The CHGB assembly incorporates a LED that indicates the side (A/B) to be read by the LDP.



This LED lights when side B is selected.

Fig. 9-5.

9.6.3 LDD Playing Indicator

The DACB assembly includes an indicator that shows whether the disc played is an LDD.

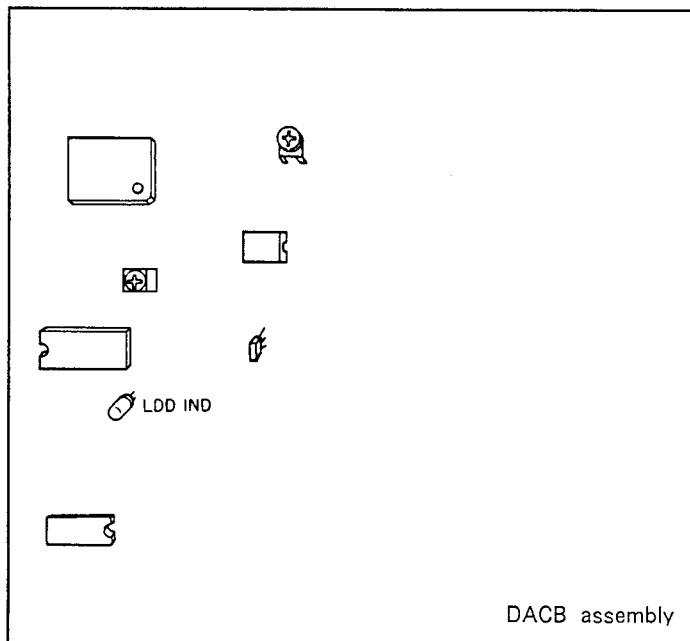
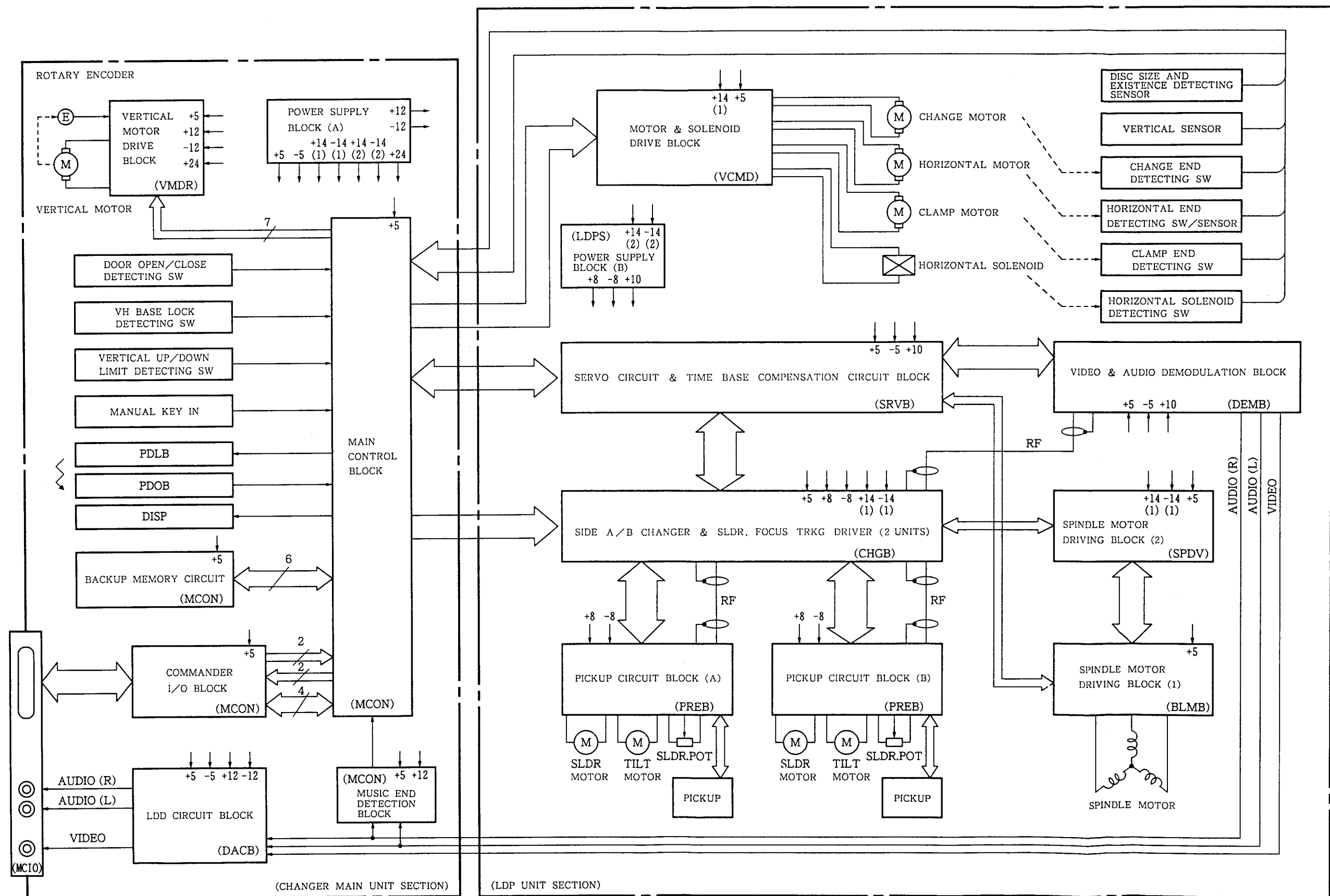


Fig. 9-6.

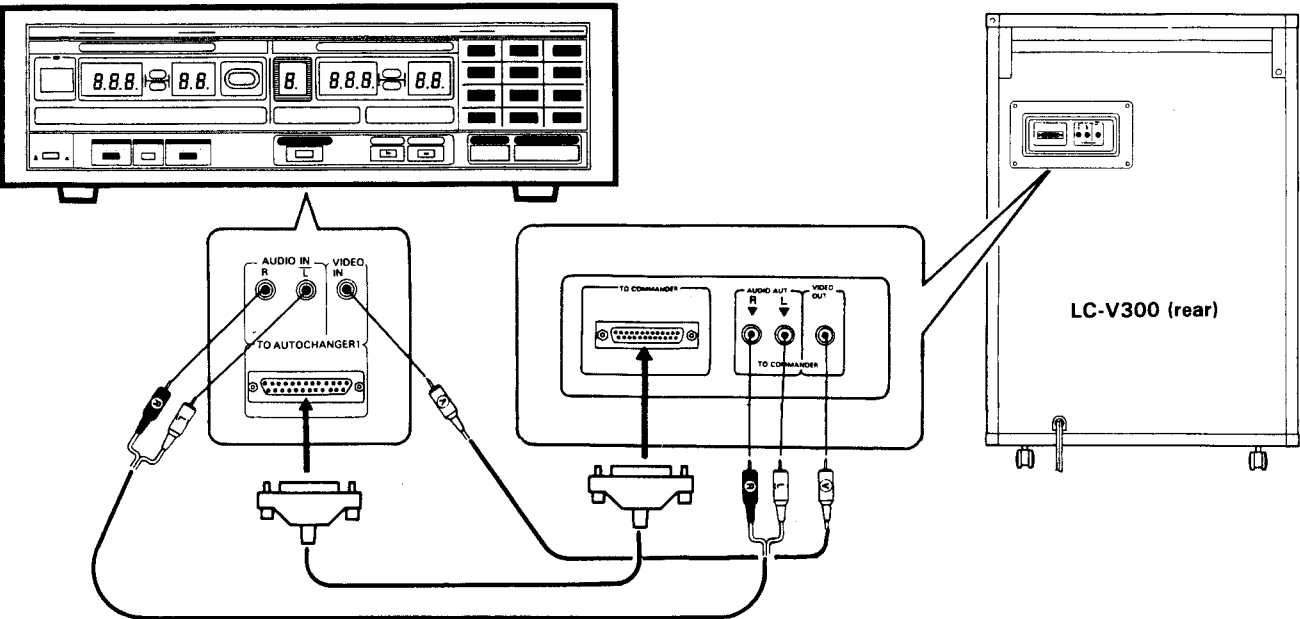
The LED lights when an LDD is being played.

10. BLOCK DIAGRAM



11. CONNECTION

Separately sold
Videodisc AutoChanger Commander CO-V300

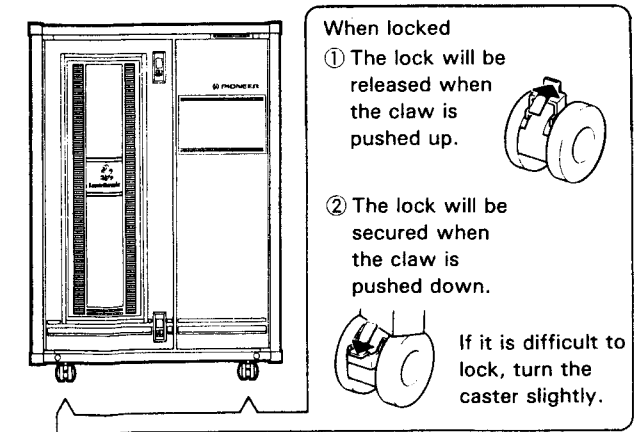


* Tighten the screws in the D-sub connector

12. HOW TO HANDLE

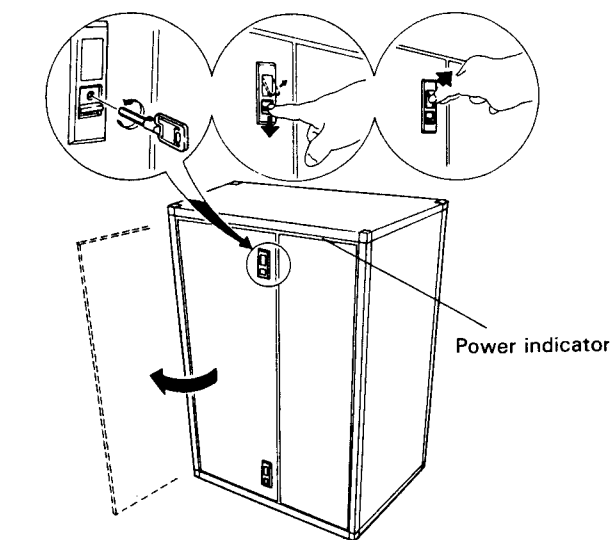
CASTER LOCK

The front casters are provided with a lock mechanism. Decide on a place of location and lock them as shown.

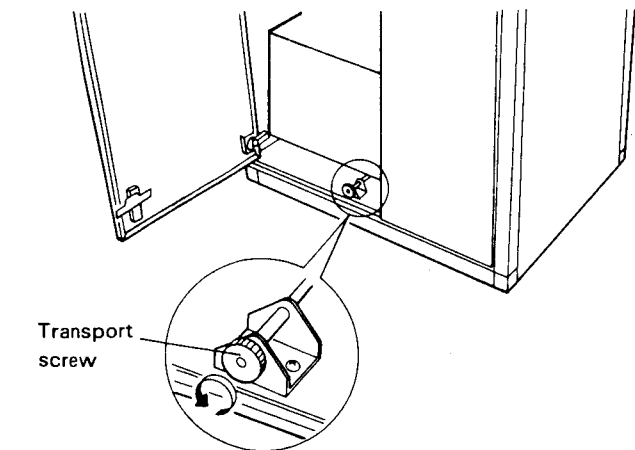


SORAGE OF DISC AND DISC TRAY

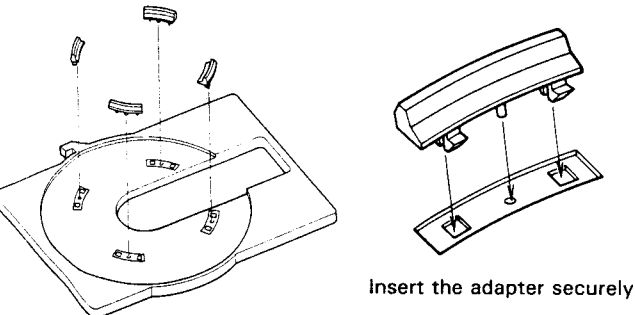
How to Open the Door
Release the door locks (at two places, top and bottom). To open the door by hand, release the locks with the key attached to the AutoChanger and press the places indicated by the arrow, then hold the knob up.



Released of Transport Screw
Loosen the screw sufficiently until there is no resistance. This screw will not come off when loosened.



How to Install 20-cm (8-inch) Disc Adapter (option)
Remove the disc tray from the groove and install the adapter.



NOTE:
Use the adapter only when playing the 20-cm (8-inch) discs. 30cm (12-inch) discs cannot be loaded to the disc tray if the adapter is installed.

Karaoke selected Disc Number Display
Displays the selected disc changer: No number is necessary to input for the first changer. Input [2] for the second changer.

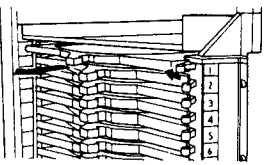
Displays the number of disc address: For the first changer, to select the disc address "6", input [6] instead of [0][6].

Disc phase A or B

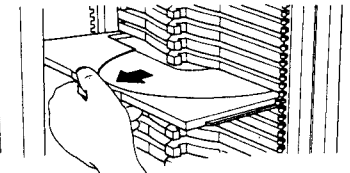
Disc track number: Input [7] instead of [0][7] when you select the disc track number "7".

Storage of Disc
Insert the disc while confirming the disc address.

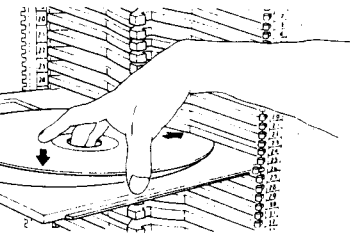
1. Press the stopper at the side of the disc address.
- The disc tray corresponding to the address will eject to the specified position.



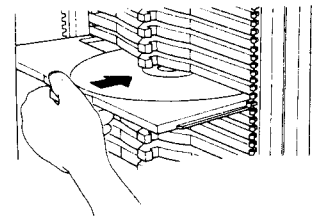
2. Draw out the disc tray.
- Be careful not to take out the tray too far. The tray may dislocate from the groove. In the case of dislocation, insert the tray along the groove as before.



3. Insert the disc.
- Be sure that side A of the disc label faces up when inserting the disc. Insert carefully to avoid damaging the disc surface with the upper tray.



4. Push back the disc tray.
- Push the tray slowly until the stopper pushed in step 1. returns to its original position.

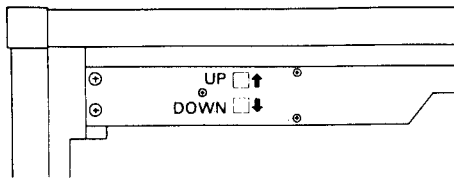


STORE ALL NECESSARY DISCS BY REPEATING THE SAME PROCEDURE.

If the player unit prevents the insertion of the discs to the disc tray, turn the power ON and press the UP/DOWN button. Hold the button until the power indicator begins to blink slowly (1/sec.), then close the door of the AutoChanger. (Lock at top and bottom.) The player goes up to the upper limit when the UP button is pressed, and goes down to the lower limit when the DOWN button is pressed. The power indicator will blink slowly (1/sec.) when the player unit is moving.

When the power indicator stops blinking, the transfer is completed. Open the door and insert the discs. However, the player unit cannot be moved by the UP/DOWN button and the power indicator will blink rapidly (4/sec.) when the transport screw has not been loosened.

If the lock of the door is released while the player unit is moving, then the player will stop immediately.



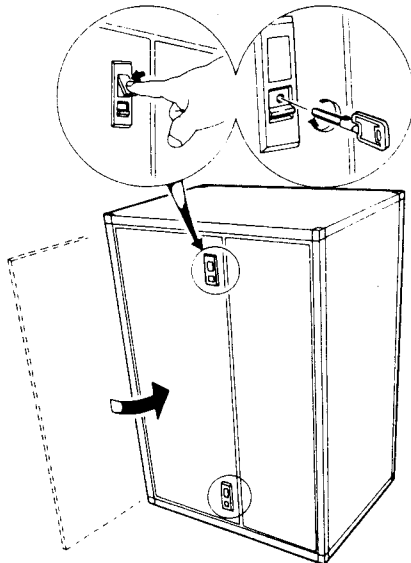
For BGV playback insert the BGV disc in the 71st and/or 72nd tray.

If BGV playback is not desired, Karaoke discs can be placed into the trays 1 - 72.

Please note that BGV playback cannot be carried out from discs in the second AutoChanger.

How to Close the Door

- Lock by lever Close the door and lock it.
(Be sure to lock at two places.)
- Lock by key Lock the door with the key attached to the AutoChanger.



The power indicator flashes when the door is closed with incorrect disc tray setting. In that case, open the door and re-set the disc tray correctly.

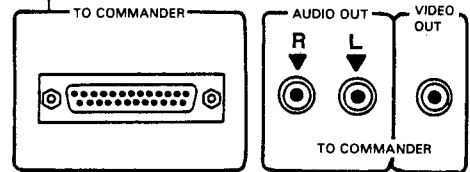
REPLACING THE DISC

Perform it with the same procedure as "Storage of the Disc." Be careful that the player stops playback when the door is opened during play.

NAMES AND FUNCTIONS OF REAR TERMINAL

Control Terminal (25-Pin D-sub connector)

Connect to the TO AUTOCHANGER terminal of the CO-V300.



AUDIO OUT Terminal (RCA jack)

Connects to the audio input terminal of the CO-V300.

VIDEO OUT Terminal (RCA jack)

Connects to the video input terminal of the CO-V300.

TRANSPORTATION

1. Open the door of the AutoChanger.
2. Remove all discs and put them into their jackets.
 - Press the DOWN button to lower the player unit to the bottom after taking out all discs. The transport screw cannot be tightened if the player is not in bottom position.
3. Tighten the transport screw.
 - Transportation without tightening the screw may cause malfunction.
4. Close the door and lock it.
5. Turn the power OFF and disconnect all connection cords.
6. Move the machine carefully. In the case of shipping, pack it in its original box.

13. SPECIFICATIONS

General

Model	LaserVision Video Disc AutoChanger
Power supply	AC 120 V, 50/60 Hz
Power consumption	110 W
Weight	151.3 kg (333 lb 10 oz)
Outer dimensions	732 (W) × 630 (D) × 1050 (H) mm 28-13/16 (W) × 24-13/16 (D) × 41-11/32 (H) in
Allowable operating temperature	+5°C to +35°C (41°F to 95°F)
Operating humidity	5% - 90%
(There should be no condensation of moisture)	

Disc in Use

Karaoke	30cm (12-inch) extended play disc (CLV)
BGV	30-cm (12-inch) extended play disc (CLV)
	30-cm (12-inch) standard play disc (CAV)
(20-cm (8-inch) discs can be played when the disc adapter (option) is used.)	

Video Output

Format	NTSC specifications
Output level	1 Vp-p (impedance 75 Ω, synchronization negative)
Output terminal	Pin jack

Audio Output

Independent 2 channels	Stereo
Output level	650 mV (CX on, 100% modulation, impedance 50 kΩ)
Output terminal	Pin jack

Other Terminals

Autochanger commander connection terminal	25-pin D-sub connector
---	------------------------

Functions

Disc capacity	Max. 72
CX noise reduction	Automatic switching

Accessories

Video cord	1
Audio cord	1
Operating instructions	1
Key	2
Control cable with 25-pin D-sub connectors	1

NOTE:

- Specifications and design subject to possible modifications without notice, due to improvement.

CX is a trademark of CBS Inc.

This player meets the CX EXPANDING SPECIFICATION.

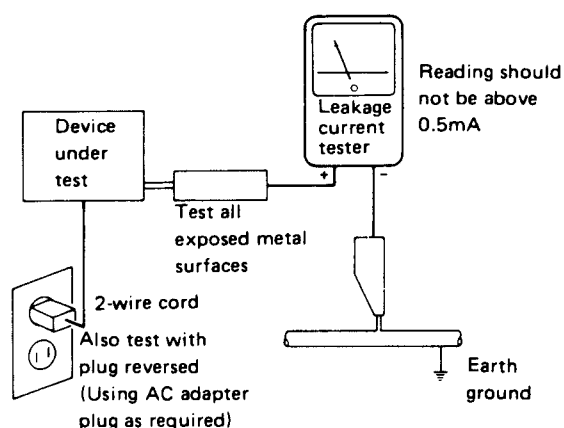
14. SAFETY INFORMATION

1. SAFETY PRECAUTIONS

The following check should be performed for the continued protection of the customer and service technician.

LEAKAGE CURRENT CHECK

Measure leakage current to a known earth ground (water pipe, conduit, etc.) by connecting a leakage current tester such as Simpson Model 229-2 or equivalent between the earth ground and all exposed metal parts of the appliance (input/output terminals, screwheads, metal overlays, control shaft, etc.). Plug the AC line cord of the appliance directly into a 120V AC 60Hz outlet and turn the AC power switch on. Any current measured must not exceed 0.5mA.



AC Leakage Test

ANY MEASUREMENTS NOT WITHIN THE LIMITS OUTLINED ABOVE ARE INDICATIVE OF A POTENTIAL SHOCK HAZARD AND MUST BE CORRECTED BEFORE RETURNING THE APPLIANCE TO THE CUSTOMER.

2. PRODUCT SAFETY NOTICE

Many electrical and mechanical parts in the appliance have special safety related characteristics. These are often not evident from visual inspection nor the protection afforded by them necessarily can be obtained by using replacement components rated for voltage, wattage, etc. Replacement parts which have these special safety characteristics are identified in this Service Manual.

Electrical components having such features are identified by marking with a Δ on the schematics and on the parts list in this Service Manual.

The use of a substitute replacement component which does not have the same safety characteristics as the PIONEER recommended replacement one, shown in the parts list in this Service Manual, may create shock, fire, or other hazards.

Product Safety is continuously under review and new instructions are issued from time to time. For the latest information, always consult the current PIONEER Service Manual. A subscription to, or additional copies of, PIONEER Service Manual may be obtained at a nominal charge from PIONEER.